NPDES "As Is" Business Process Analysis for Compliance Reporting

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Executive Summary

The U.S. Environmental Protection Agency (EPA) is considering alternatives for implementing electronic reporting technologies, including Web forms, electronic data interchange, and other electronic commerce technologies. Goals include reducing the burden of reporting requirements and improving data quality. To implement data standards and electronic reporting, the agency is developing the central receiving (CR) facility. The CR facility is a central point that supplements EPA reporting systems by performing current and new functions for receiving legally acceptable data in various formats (e.g., electronic, paper, diskette), including consolidated and integrated data.

To develop a viable "to be" CR design, the EPA is identifying and documenting current process flows and functional requirements of four compliance reporting programs: Public Water System Supervision, Aerometric Information Retrieval System and National Emission Trends System, National Pollutant Discharge Elimination System (NPDES), and Toxic Release Inventory System. The analysis of the four programs will serve as a baseline of current operations and procedures to develop the CR functional requirements. This report records the processing of data related to the Discharge Monitoring Report (DMR), which is part of the NPDES program.

The Clean Water Act of 1977 requires the EPA to manage the discharges of pollutants into navigable waterways by issuing permits with discharge limits. The EPA established criteria for delegating authority to states to oversee their own NPDES programs. Facilities that receive permits must monitor and submit DMRs on their discharges. Reports are sent to their EPA region, or state if delegated, on a monthly, semiannual, or annual schedule required by their permit. EPA requires states and regions to forward data to the Permit Compliance System (PCS), the EPA's national information system for NPDES.

The Logistics Management Institute conducted a business process analysis of the "as is" data flow and functional requirements for the NPDES program, specifically the submission of DMRs. The process was analyzed according to the roles of four primary NPDES stakeholders—facilities, states, EPA regions, and

EPA federal entities. For each stakeholder, we considered the following eight process and support activities:

- *Program management* consists of administering the program (except for functional activities) plus developing and delivering Permit Compliance System (PCS) training, guidance documents, and quality assurance and control manuals.

- *Mail receipt* consists of stamping, logging, distributing, and sorting submissions or any received mail.

- *Data capture function* consists of entering data into an information system.

- *Data reconciliation function* consists of identifying and correcting errors—without contacting the facility.

- *Data archive function* consists of maintaining current and historical documents in a database and physical files.

- *Data distribution* consists of generating DMR forms and internal and external reports (e.g., quarterly noncompliance, edit, audit, Freedom of Information Act, query, legislative).

- *Information system* consists of hardware, software, and programming and related operation and maintenance activities, including training, modernization, and system upgrade; user support (hotline); and documents and guides.

- *Compliance and enforcement* consist of compliance reviews of facility reporting, monitor activities, inspections, and enforcement actions for evaluating or pursuing legal action.

The NPDES program is as an example of a mixed delegated reporting program wherein facilities report to EPA regions or delegated states in which the facilities are located. We estimate that approximately 650,000 DMRs are submitted annually by 155,000 regulated facilities. The processing and communication functions employed by stakeholders in the NPDES program identify functional requirements essential for building a viable “to be” CR model.

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Part I
Introduction

The chapters in Part I provide introductory and background information for this report. Chapter 1 presents the purpose and provides background on the U.S. Environmental Protection Agency's (EPA's) electronic compliance reporting initiatives and development of a central receiving (CR) facility to manage reporting transactions centrally. That chapter also presents an overview of the non-delegated National Pollutant Discharge Elimination System (NPDES) reporting program and the methodology used in this business process analysis. Chapter 2 provides a high-level overview of the key stakeholders and their functions as part of the NPDES reporting process.

Chapter 1
Introduction

The EPA issued its Reinventing Environmental Information initiative, or REI initiative, to guide the agency's efforts to improve its operating procedures and reduce the reporting burden of the regulated community. The REI initiative seeks opportunities for the regulated community to submit environmental compliance reports electronically. The EPA is evaluating electronic reporting options for its large report-collection systems.

One EPA effort is to evaluate electronic reporting for common environmental reporting models. This report and its companion reports provide the EPA with an in-depth analysis of reporting systems that constitute the following four common reporting models:

- *Nondelegated.* The Toxic Release Inventory program provides a model for systems where EPA maintains primacy—it has jurisdiction and sets regulatory requirements.
- *Mixed delegation.* The NPDES program is largely delegated to the states. The NPDES data collection represents a model for systems with mixed regional and state primacy.
- *Full delegation.* The Aerometric Information Retrieval System and National Emission Trends System require reporting of Clean Air Act–related data where all states are delegated authority to manage their data collection.
- *Nearly full delegation, complex.* The Public Water System Supervision program represents a complex reporting structure with states, localities, public water suppliers, and testing laboratories involved in data collection, analysis, and reporting.

This report focuses on the NPDES program as a model for a mixed delegated reporting system. The EPA and its stakeholders will evaluate the process described in this report to assess the ability of electronic reporting to assist in collecting environmental data and managing programs of this type.

PURPOSE

The EPA tasked the Logistics Management Institute (LMI) to document the "as is" data process flow for the NPDES program. We define in this report a common "as is" process for compliance reports submitted by NPDES-permitted facilities to

delegated states and regions, as well as the state and regional submission processes to EPA.

An analysis of future electronic reporting options is not part of this study, but will be described in a forthcoming report that considers all four "as is" reporting models.

NPDES COMPLIANCE REPORTING

Under the Federal Water Pollutant Control Act (1972) amendments, the Clean Water Act (1977) gives the EPA, in coordination with the states, authorization to issue permits to facilities discharging pollutants into the country's navigable waterways and to limit the discharges.

The Clean Water Act of 1972 established the NPDES program to regulate wastewater discharges from facilities. The purposes of NPDES permits are to protect human health and the environment and ensure that every regulated facility treats its wastewater. More than 200,000 sources are regulated by NPDES permits. NPDES permits regulate household and industrial wastes that are collected in sewers and treated at municipal wastewater treatment plants. Permits also regulate industrial point sources and concentrated animal feeding operations that discharge into other wastewater collection systems or that discharge directly into receiving waters. Specifically, NPDES program areas associated with water permitting include Animal Feeding Operations, Pretreatment, Stormwater, Municipal Wastewater Treatment Plant, Biosolids, Industrial, and Combined Sewer Overflow.

Each discharging facility must obtain a NPDES permit (individual or general permit) that describes pollution limits and specifies monitoring and reporting requirements for each pipe that discharges directly to a U.S. waterway. The facility monitors its discharges according to permit requirements and reports the data to a delegated state or EPA regional authority. If regulated facilities fail to comply with the provisions of their permits, they may be subject to enforcement actions. The EPA uses a variety of techniques to monitor compliance status, including onsite inspections and review of data submitted by the facilities.

Delegated states may modify the EPA's reporting requirements, but only to add requirements or make them more stringent. The delegated authority may directly enter the reports into the EPA's Permit Compliance System (PCS) database or a local database for later upload into PCS. The predominant means of collection into PCS is through the Discharge Monitoring Report (DMR) filed by facilities that are classified as major generators of wastewater. PCS can also accommodate data for minor generators, pretreatment data, and stormwater reports. The EPA is upgrading PCS to a relational database that will provide more options for accessing and processing data. In addition, the delegated authorities want a better data exchange format that can be used with the current PCS and also be compatible with the new PCS. To that end, an Interim Data Exchange Format team, consisting of EPA and other stakeholders (e.g., states and regions), determined that

development of a new exchange format is appropriate and recommended that the EPA begin to develop the format.

Submitting DMR forms and entering DMR data into the delegated authorities' databases are largely manual processes. As part of their individual or general permit, facilities report discharge levels of regulated pollutants (conventional, toxic, and unconventional) and concentrations in the 25 data elements of the DMR form. (See Appendix A for EPA's suggested DMR form.) The DMR forms are submitted on a periodic basis as specified by a facility's permit (most DMRs are submitted monthly). Facility personnel complete the DMR form and mail it to the regulating EPA region or NPDES state. The DMR data are manually entered from the form into PCS or a state-maintained database.

METHODOLOGY

In preparing this study for the EPA, LMI staff interviewed representatives from three states (Wisconsin, Texas, and Mississippi), three EPA regions (Region 2, 4, and 6), and EPA headquarters. The representatives were from several program offices, including water, information management, enforcement, compliance, and permitting, and included technical specialists, data control staff, and program managers. Three sets of questionnaires were developed—one set for managers, a second set for submission processing staff, and a third for NPDES-related compliance and enforcement activities.

The states and regions interviewed for this study were chosen for a representative cross-section based on their programs' status and maturity. Region 2 was selected because all states in the region have been delegated primacy for administering the NPDES program. Region 4 was chosen because it maintains a reporting relationship with several facilities in a state that has been granted delegation. Region 6 was chosen because it recently extended delegation to Texas and also maintains several reporting activities. Wisconsin was chosen because it is a fully delegated state with a mature program that uses a local database for capturing DMR information. Texas was chosen because it is a recently delegated state transitioning from a local database to PCS for information collection. Mississippi was chosen because it is a delegated state that uses PCS.

In addition to interviews, the EPA, state, and region delegated authorities provided procedure manuals, data specifications, system reports, system outputs, and other system documentation for us to develop a conceptual understanding of the NPDES compliance reporting process.

REPORT ORGANIZATION

This report is divided into six parts—the parts are Part I, Introduction; Part II, Facility; Part III, State; Part IV, Region; Part V, Federal; and Part VI, Summary. Parts II–V describe a specific stakeholder's role in the NPDES program. For each

of the facility, state, region, and federal stakeholders, their NPDES process is presented in the following functions:

- *Chapter 1, Process Overview*. This chapter identifies the core and supporting functions of NPDES and provides an overview of the NPDES data process flow.

- *Chapter 2, Program Management*. The NPDES program management oversees the operational and administrative activities. The program management integrates policy into the data processing aspects of the NPDES program. Programs also include assistance and outreach to promote compliance.

- *Chapter 3, Mail Receipt Function.* The mail receipt function prepares mail pieces for data processing.

- *Chapter 4, Data Capture Function.* The purpose of data capture is the data entry of "as submitted" facility and discharge information into a database.

- *Chapter 5, Data Reconciliation Function.* The data reconciliation function reviews and reconciles data as submitted by the facilities. The purpose of data reconciliation is to eliminate duplication, resolve discrepancies and inconsistencies, and eliminate errors.

- *Chapter 6, Data Archive Function*. The submission archiving function ensures that original submissions are retained for the required period.

- *Chapter 7, Data Distribution.* The data captured by states and EPA regions provide information to evaluate the programs' efforts. The data are also made available to the public, and EPA headquarters releases data from PCS to Envirofacts, a data warehouse available for public and private use.

- *Chapter 8, Information System.* The EPA and states use information systems to support data processing and serve as tools to collect, organize, and report DMR data.

- *Chapter 9, Compliance and Enforcement.* The purpose of the compliance and enforcement function is to ensure that facilities that meet reporting requirements report their discharges accurately.

- *Appendices*. The appendices provide supplemental information for chapters in the parts.

Chapter 2
NPDES Stakeholders

This chapter provides an overview of the key stakeholders in the NPDES reporting process. The functional process activities for each stakeholder—Facility, are described in Parts II, III, IV, and V.

The NPDES reporting process is developed and maintained based on the efforts of the following stakeholders: reporting facilities, state NPDES programs, EPA regions, and federal (i.e., EPA headquarters). NPDES data are widely used by the public; the media; other EPA program offices; state, local, and tribal governments; environmental and industry advocacy groups; researchers; and the business community.

FACILITY

Facilities monitor their discharges periodically and report the results to EPA regional or state enforcement personnel using a DMR. Facility personnel are responsible for understanding and meeting all NPDES permit requirements and submitting complete, accurate, and legible data. The data include facility noncompliance reports, which contain the violation type, date, duration, cause, and corrective action taken.

All facility reporting requirements are described in a permit. Facilities occasionally modify their operations and processes and, therefore, request and obtain amendments to their NPDES permits. As a requirement of their NPDES individual or general permit, each submitting facility must certify the accuracy of the information contained on the DMR.

STATE

Each delegated state has the authority to manage its processes, and the approach varies by state. The responsibility and authority are managed by different state agencies and offices. In Mississippi, responsibility and authority for oversight and management of the discharge monitoring program reside in the Department of Environmental Quality, which includes the Office of Pollution Control, Surface Water Division, and Environmental Compliance and Enforcement Division. In Texas, responsibility and authority for oversight and management are assigned to the Texas Natural Resource Conservation Commission, which includes the Enforcement Division and Water Quality Management Information Systems Office. In Wisconsin, responsibility and authority for oversight and management are

assigned to the Department of Natural Resources, which includes the Bureau of Legal Services, the Division of Water, and the Bureau of Watershed Management.

A process may be the responsibility of several individuals, and sometimes one person may be responsible for more than one process. For example, Mississippi has engineers who monitor submissions and staff who enter the submissions in a database, while Wisconsin's field engineers are responsible for monitoring and entering submissions.

As this report was being prepared, 43 states had been granted authority to oversee and manage their NPDES programs. Delegated states have regulatory requirements that are equal to or more stringent than the federal requirements. They may also mandate additional monitoring requirements for facilities that report to them. Their reporting channel, for the most part, bypasses the EPA regional office associated with their state and connects directly to the EPA's PCS at the National Computer Center (NCC) in Research Triangle Park, North Carolina. While delegated states may collect information beyond federal minimums, states only forward information that the federal regulations require. States arrange to upload their database information via a PCS format based on 80-column card readers. Some delegated states use PCS to support their programs, while others use internally developed or commercial database systems with ties to PCS.

REGION

For nondelegated states, the EPA regional office has jurisdiction. Its regulatory requirements are commensurate with the federal requirements. Facilities in nondelegated states report directly to their EPA regional office. This collection does not prevent a nondelegated state from requiring the reporting of similar data to it as part of its state regulations, but the state data are not forwarded to PCS.

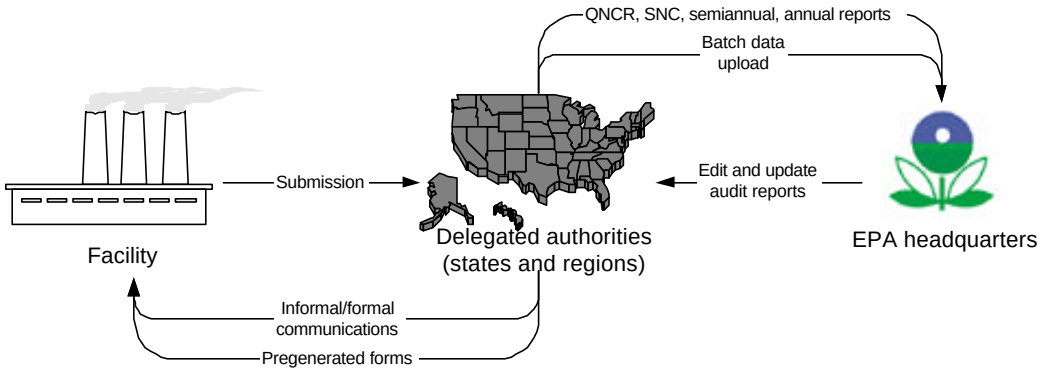
FEDERAL

The data collected by states and regions are aggregated by the Office of Enforcement and Compliance Assurance (OECA) at EPA headquarters. OECA maintains the PCS database and provides oversight for compliance and enforcement efforts. PCS is one of EPA's largest information systems and contains approximately 15 million records.

REPORTING PROCESS

Figure I-2-1 is the high-level data flow of NPDES submissions and related activities.

Figure I-2-1. High-Level Data Flow



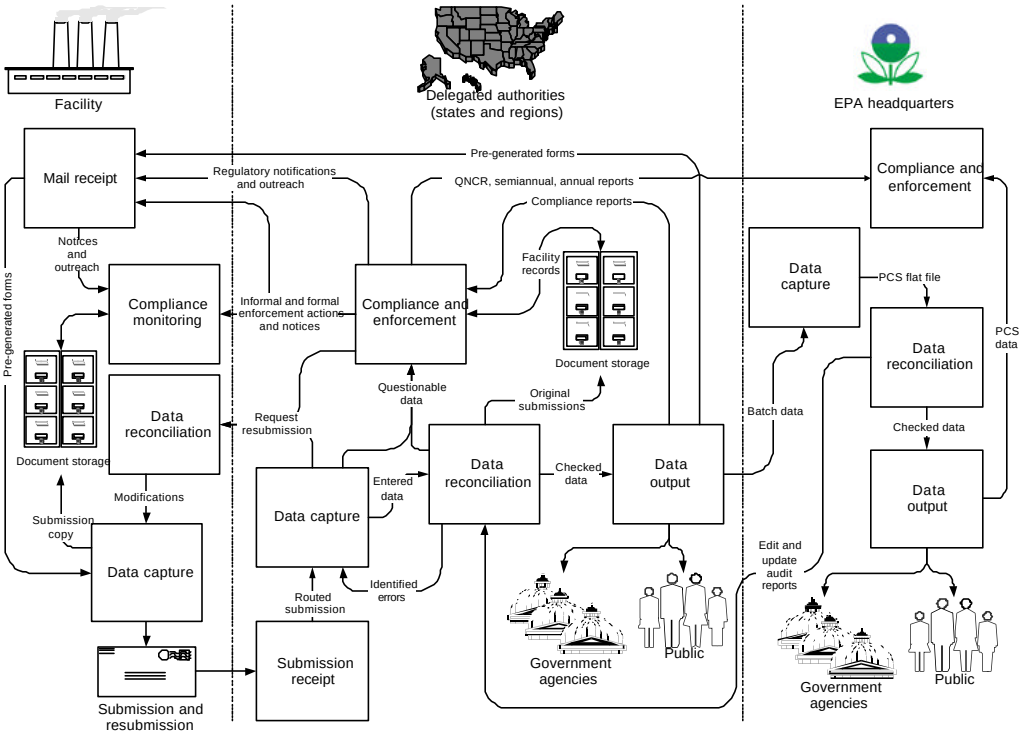
Note: QNCR = Quarterly Noncompliance Report; SNC = Significant Noncompliance.

The regulated facilities are self-monitoring; that is, each permittee monitors the levels and types of pollutants discharged and reports them to EPA regions or the delegated states. The DMR describes the results of a facility's self-monitoring activities. After the DMR is received, EPA regions or delegated states enter the data into their compliance database. The collected data are entered directly into PCS or uploaded by the delegated authority.

Developing a process flow for such a complex system is a challenge. The opportunities for the stakeholders to organize their processes permit as many variations of implementation as the number of stakeholders. As a result, this chapter depicts a flow that reflects a large number of organizational structures.

Figure I-2-2 depicts the NPDES reporting process. This figure is referred to throughout this report as we examine the pieces more closely. In addition to the functions specifically depicted in Figure I-2-2, the relationships of program management and information systems that affect the other functions are presented.

Figure I-2-2. Reporting Process Overview



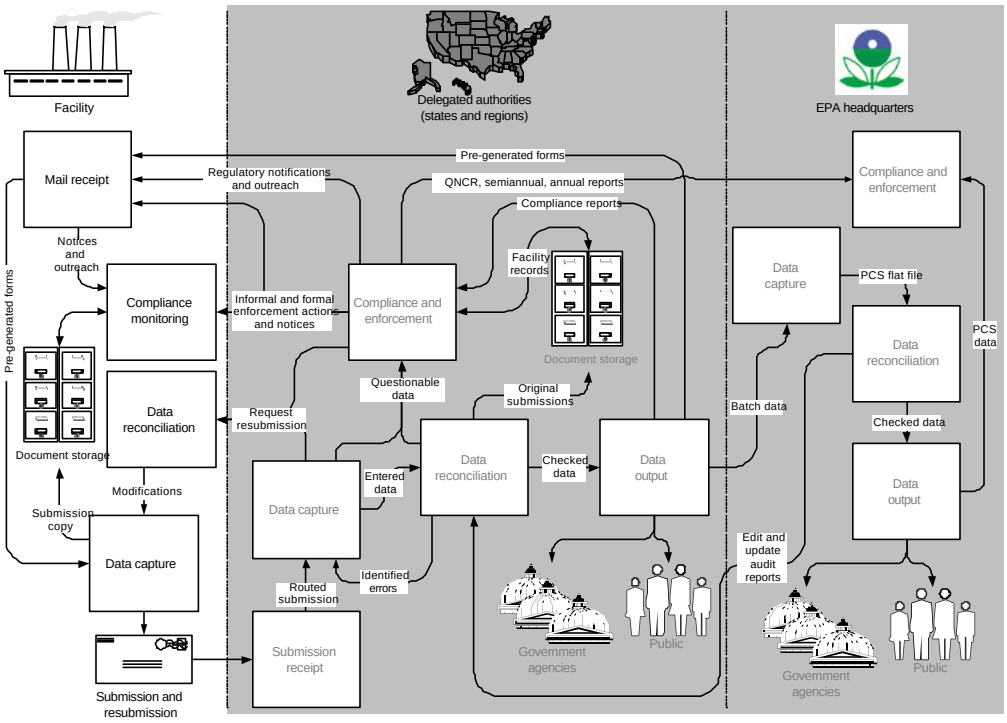
Part II
Facility

Part II explains the “as is” process for a regulated facility. The chapters in this part describe the general reporting process, including reporting scenarios, mechanisms, and processing functions.

Chapter 1
Facility Process Overview

The main activity of a designated facility representative is to submit data, including analytical results of collected samples, on a standard form in accordance with the facility's NPDES permit. A record of the results must be presented on a DMR form provided by the regulatory authority or on a facility-requested substitute form approved by the regulatory authority. The results are certified by an authorized representative of the facility and mailed (most often via the United States Postal Service, USPS) to the regulating state or EPA region. The non-grayed area of Figure II-1-1 represents the facility reporting process.

Figure II-1-1. Facility Process Overview



In accordance with the facility's NPDES permit, water samples are collected and submitted to a designated laboratory for chemical analysis. Sample collection and laboratory analyses are typically contracted services. Sample results are submitted to the contractor after data review and forwarded to the facility in a DMR-reportable format. The facility designee reviews the report from the contractor and laboratory. The designee is usually a facility employee familiar with the NPDES permit program and on-site operations and activities. The person usually is not the facility director or a company official. The designee certifies the information is accurate or arranges for the contractor or laboratory to resubmit the

information if an error is detected. After the DMR submission is certified by the facility designee as accurate, it is forwarded to the regulatory agency. The submission may be made via registered mail with certified receipt returned to the facility designee to verify that the submittal was received. The certified receipt is retained with permanent records.

Chapter 2
Facility Program Management

PURPOSE

The purpose of facility program management is to ensure the requirements of the NPDES permit are being followed. Program management also involves requests for new permits and modifications to existing permits based on new facility processes or modifications to existing facility processes. In addition, program management involves the synthesis and interaction of core functions in the overall data process flow.

DESCRIPTION

NPDES permits define pollution limitations and monitoring and reporting requirements. A facility determines its procedures for collecting and recording the data to meet the reporting requirements.

Facilities generally contract the collection and analysis of water samples. An employee of the facility is designated to certify the results before they are submitted to the state or EPA region. The designee is typically a facility manager. Procedures to certify the results vary by facility.

The size of a facility and the number of reports submitted can influence the resources allocated to compliance reporting. For example, large, complex facilities with multiple outfalls and NPDES permits typically require more data collection at a higher sampling rate than smaller, less complex facilities. To fulfill NPDES permit requirements in a timely and cost-effective manner, a facility may have automated monitoring equipment or information systems to support data collection, monitoring, and reporting.

Chapter 3

Facility Mail Receipt Function

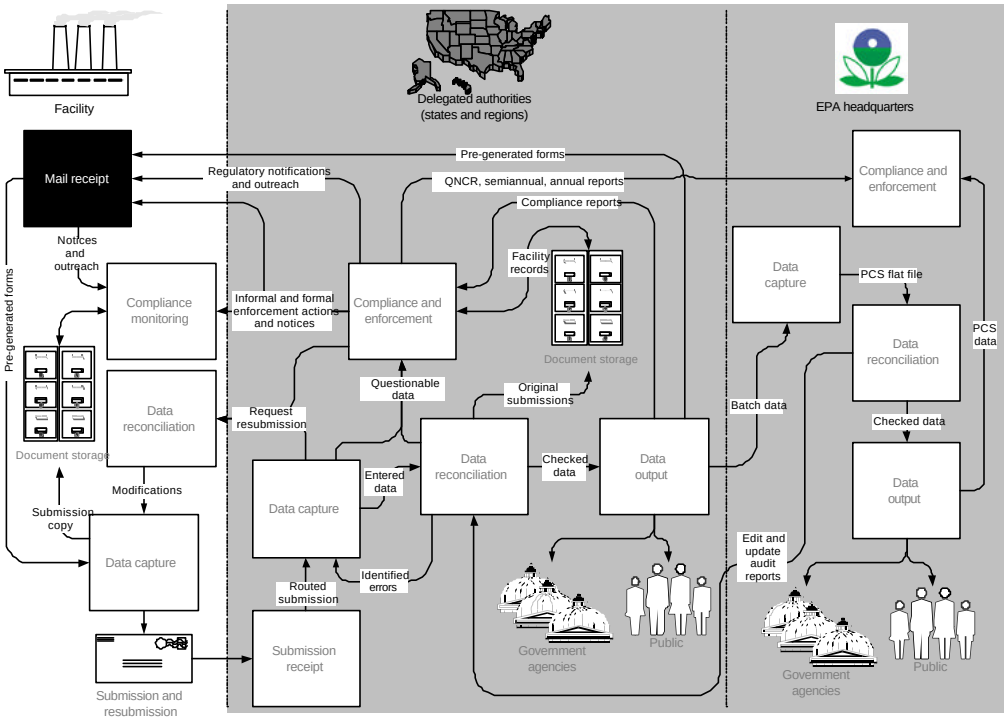
PURPOSE

The purpose of the facility mail receipt function is to ensure that incoming mail, which may contain essential forms and notifications, is received by personnel directly responsible for operating the facility in compliance with its NPDES permit.

DESCRIPTION

Incoming mail received at the facility from state and EPA program offices primarily consists of pregenerated DMR forms, but can also include workshop notifications, regulatory changes, proposed legislation, PCS modifications, and training session notices. Figure II-3-1 shows the flows through a facility's mail receipt function.

Figure II-3-1. Facility Mail Receipt Function in Overall Process



As mail arrives, it is sometimes date stamped in the mailroom or program area office and distributed or picked up by the intended recipient. Typically, received mail is not logged. When pregenerated DMR forms are received, the

facility-compliance staff may review the received information for accuracy with respect to pollutants, limitations, and monitoring and reporting requirements to ensure the information matches the facility's NPDES permit.

Chapter 4

Facility Data Capture Function

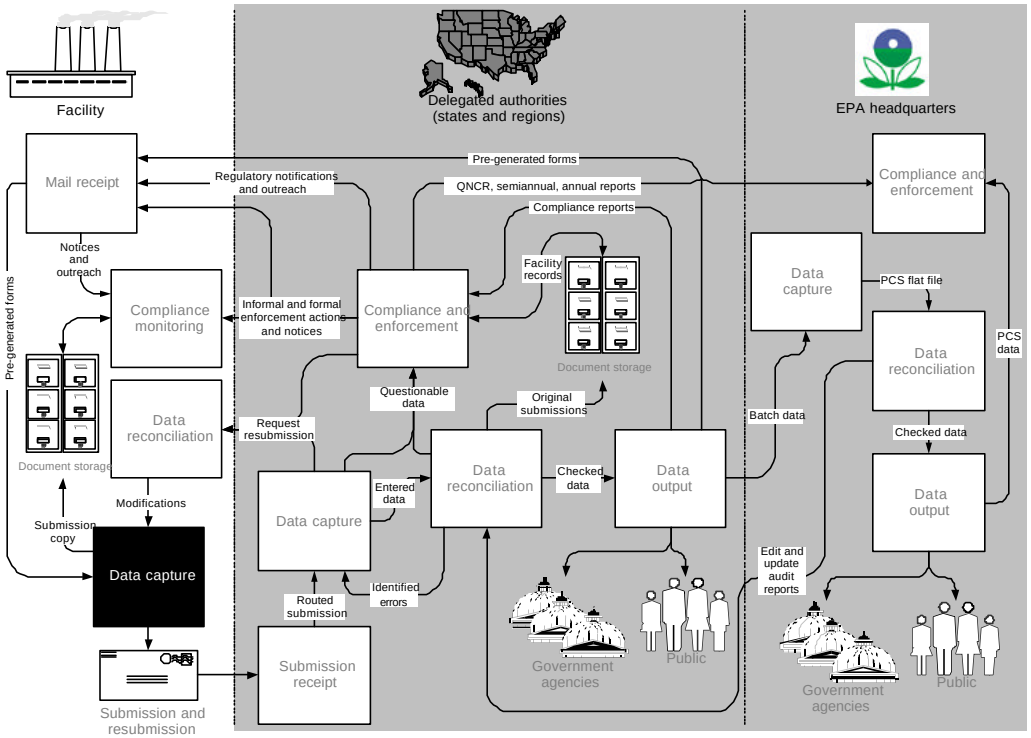
PURPOSE

The purpose of the facility data capture function is to collect all pertinent data, including water sampling data and analytical results, regardless of whether they are used for internal or external purposes.

DESCRIPTION

Figure II-4-1 shows data capture in relation to the overall process.

Figure II-4-1. Facility Data Capture Function in Overall Process



A facility's staff may collect data, or the facility may contract out this function. A contracted staff is almost always used for sampling discharges. The samples may be collected manually or through the use of an automatic sampler, which can be set in place as needed or permanently installed to collect discharges. For example, automated sampling equipment can automate the recording of bottle number,

volume of sample collected, time-date stamp, sample type, and reason for collection. In this example, data can be extracted with proprietary software and recorded in a text file format or downloaded to a personal computer (PC) application. The electronic data format can be used to produce reports or electronic mail (e-mail) information to a lab, facility, or regulator.

Regardless of collection method, samples are submitted to an analytical laboratory for chemical analysis. The laboratory may be located on- or off-site, but it is generally operated by a contracted organization. Analytical procedures are usually automated, and results are recorded in a commercial database or spreadsheet. For some parameters, the procedures may be manual; results are captured manually and entered into a database. Laboratories report results in hard-copy form and sometimes electronically on diskette or via e-mail in a format requested and designated by the facility.

The results are reported by the facility on a state or region pregenerated DMR form or one approved by the state or region where the DMR will be sent. A copy is made and kept in the facility's files.

When errors are detected in a submission sent to the regulating state or region, the facility often is asked to complete a corrected DMR. The corrected DMR is certified by the facility's designated representative, and a copy is made for the files. In some cases, a facility makes a copy of the original DMR, re-signs the DMR and forwards it to the state or region, which places the signed copy in a file.

Chapter 5

Facility Data Reconciliation Function

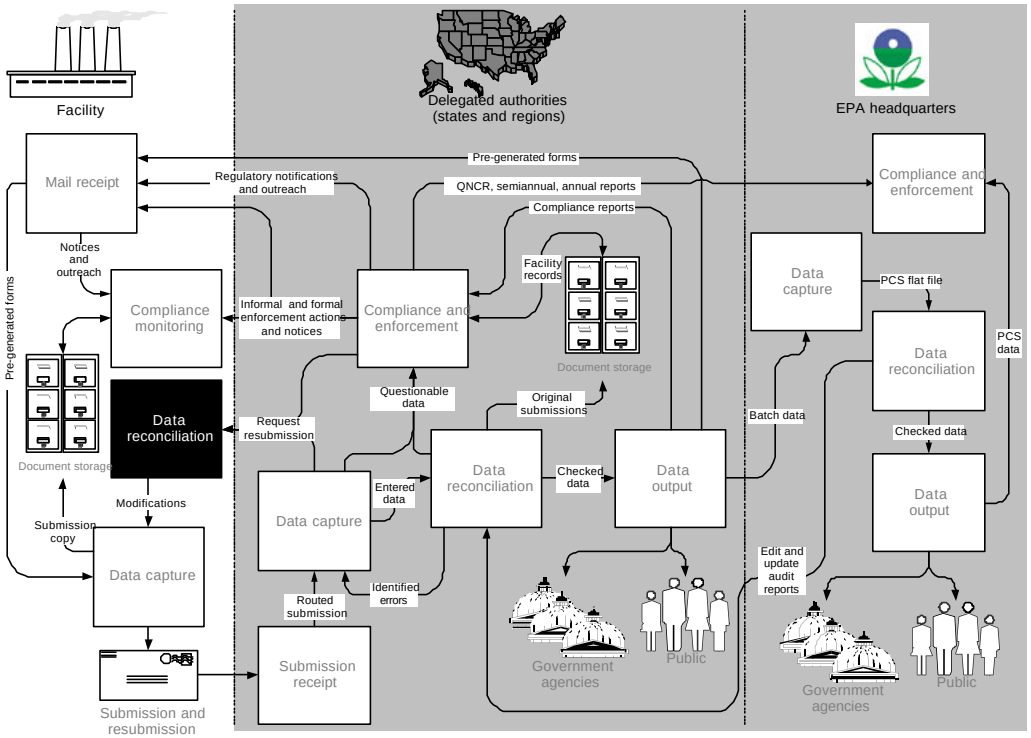
PURPOSE

The purpose of the facility data reconciliation function is to verify and correct potential errors in a submission that may cause the regulating state or region to request a corrected submission.

DESCRIPTION

Each facility establishes its own protocol for data reconciliation efforts by its staff and contractors. The facility designee is responsible for preparing the submission properly so that it is received by the regulatory authority with the correct signature, on time, with complete and accurate information. Modifications are identified and captured on a replacement submission. Figure II-5-1 depicts the data reconciliation function in the overall process flow.

Figure II-5-1. Facility Data Reconciliation Function in Overall Process



Facilities verify the accuracy of information when it is sent to the state or EPA region. (We could not determine the frequency that facilities verify the accuracy of information in public EPA databases.)

Chapter 6
Facility Data Archive Function

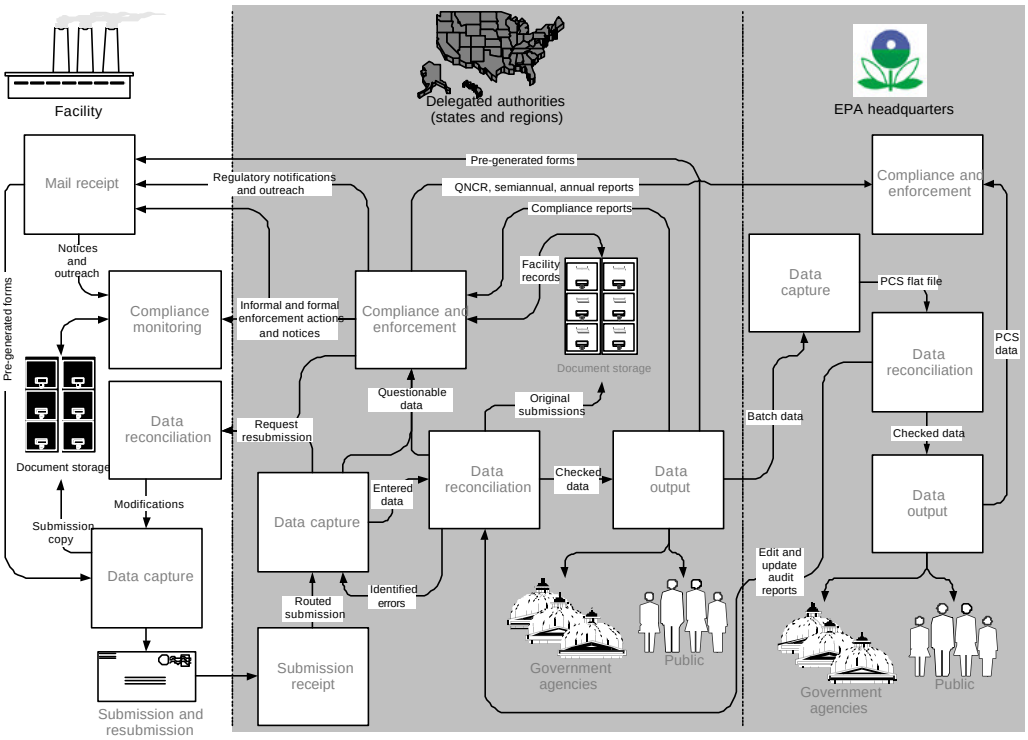
PURPOSE

The purpose of the facility data archive function is to facilitate accurate and timely record maintenance and data storage to comply with internal and permit retention requirements.

DESCRIPTION

Generally hard-copy records are stored in a filing system in a central location for at least 5 years. The 5-year storage is a minimum federal requirement; the requirement of EPA regions and states may be longer. Facility procedures may require record retention and storage for the length of time the facility is in operation. In some facilities, hard-copy records are transferred to a database and stored electronically for at least 5 years. Some facilities are beginning to use a geo-spatial or geographic information system (GIS) to track, store, and manage all environmental data, including NPDES permit-related data. Figure II-6-1 represents the flows to the facility's document storage in the overall process flow.

Figure II-6-1. Facility Data Archive Function in Overall Process



Chapter 7
Facility Data Distribution

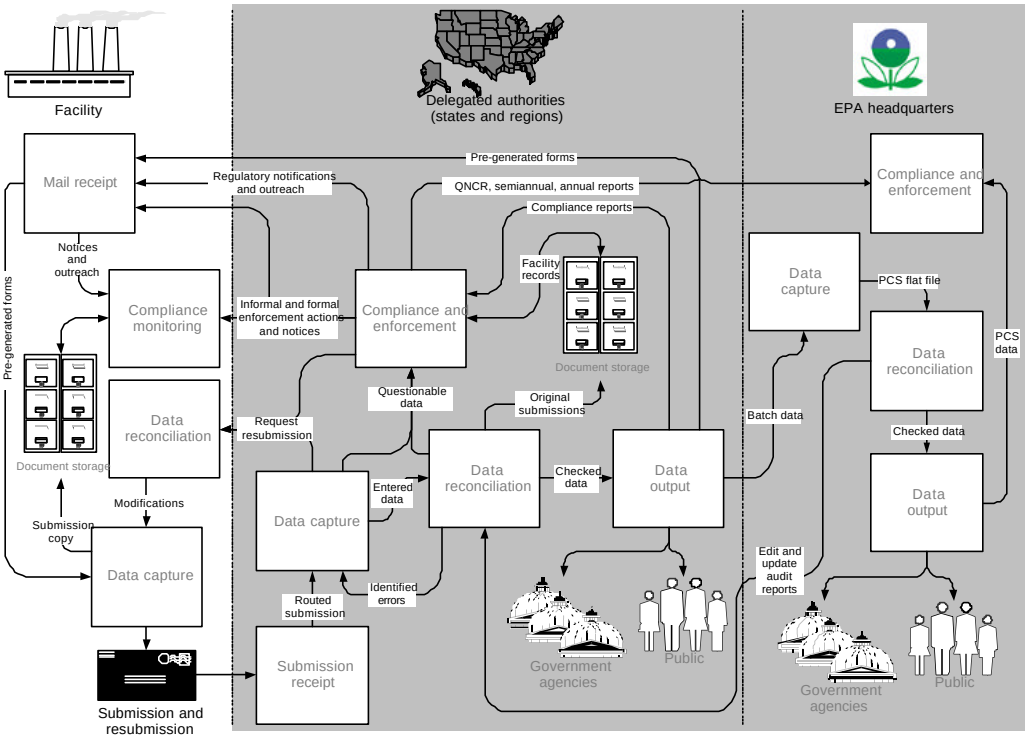
PURPOSE

The purpose of the facility data distribution process is to ensure that certified results and other information are signed (on all pages) and mailed to the appropriate state or regional regulatory authority and others as required.

DESCRIPTION

After the DMR form is certified as accurate and a facility copy is made, the copy is mailed to the regulatory authority. Submissions are not required to be sent by certified mail, but a facility usually does not receive an acknowledgement of receipt by any other means. In some cases, a state or EPA region may send the facility a letter acknowledging the receipt of data. In other cases, a facility representative may call the reporting agency to confirm submission receipt. A facility is more likely to receive an "acknowledgement" when the data are incomplete, late, or otherwise deficient. Figure II-7-1 depicts the submission ready for mailing to the state or region.

Figure II-7-1. Facility Data Distribution Function in Overall Process



Chapter 8
Facility Information System

The facility information system maintains historical sampling data and is used to facilitate submission of the DMR on paper forms. At a facility, information systems may include hardware and software used to facilitate equipment handling, sample collection, and laboratory analysis. Information systems may also be used internally to manage data, prepare DMRs, track and analyze trends, and measure performance. They may also be used to prepare information for external use by regulators, the public, shareholders, and trustees or other oversight boards.

Large, complex facilities are more likely to have major discharges than small, relatively simple facilities with typically minor discharges. Therefore, large, complex facilities are more likely to have software and hardware capable of capturing, tracking, and reporting compliance data. The hardware and software may be a system the facility has installed or developed specifically for compliance tracking. For example, a large, complex facility may use an enterprise system on servers or mainframes, while a small facility may have a stand-alone PC. Some states are developing applications to assist small facilities that do not have adequate systems. As mentioned previously, some facilities are beginning to use a GIS to track, store, and manage all environmental data, including NPDES permit-related data.

Chapter 9

Facility Compliance and Enforcement

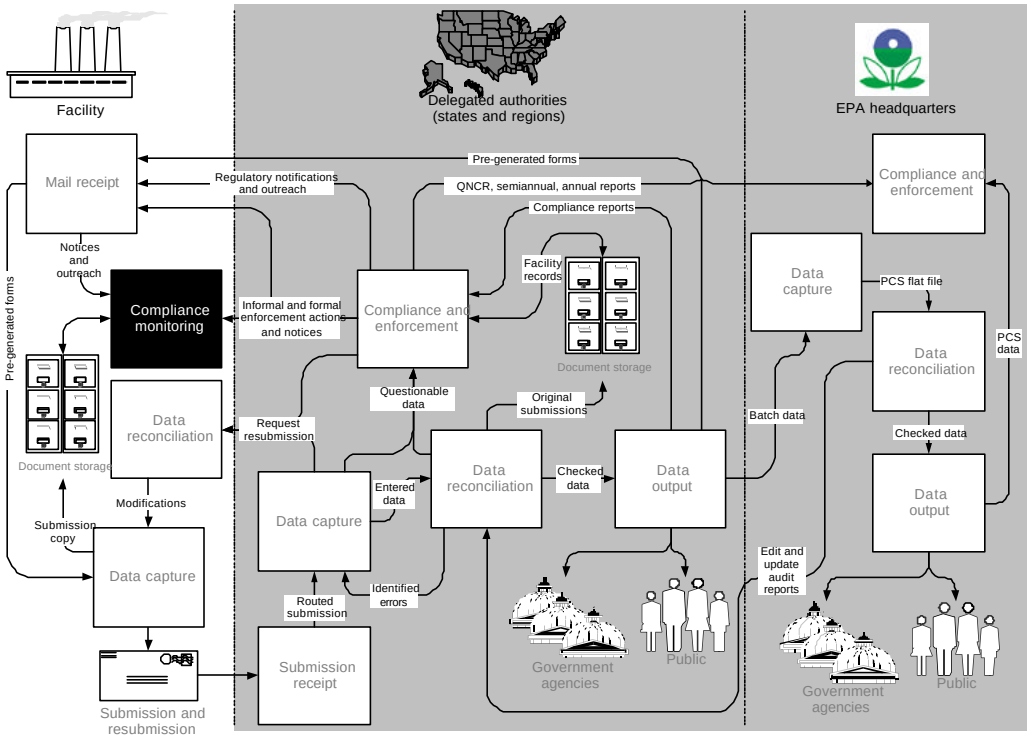
PURPOSE

The purpose of the facility compliance and enforcement function is to ensure that all NPDES requirements are met.

DESCRIPTION

Facilities are subject to regular inspections by their regulated authority. Their compliance records need to be available to regulators when requested. A regulator can request all compliance records for the past 5 years (and sometimes longer if they are available). Figure II-9-1 represents the flow of data to the compliance-monitoring activities of a facility.

Figure II-9-1. Facility Compliance Monitoring in Overall Process



A facility is responsible for monitoring reporting requirements issued by the EPA and states. To be current on compliance requirements, a facility may attend informational and certification workshops offered by some states.

Facilities may conduct internal compliance and enforcement inspections in addition to those conducted by state, region, or EPA headquarters staff.

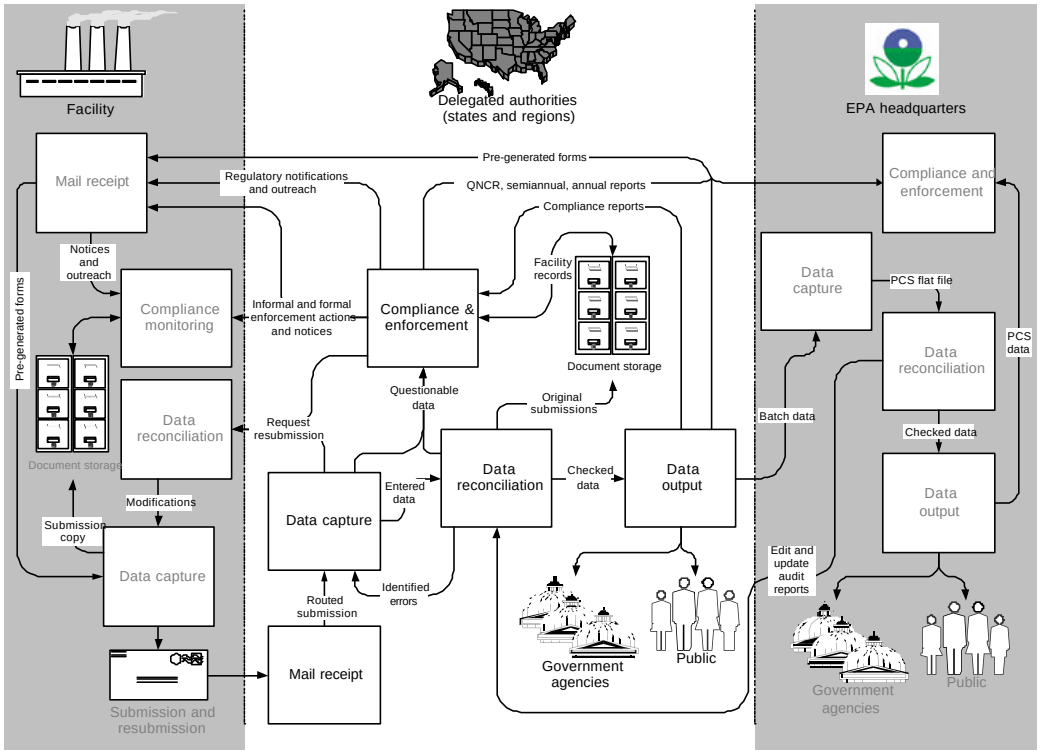
Part III
State

Part III explains the “as is” process for a state. The chapters in this part describe the general reporting process, including reporting scenarios, mechanisms, and processing functions. The information in this part is based on interviews that we conducted with Mississippi, Texas, and Wisconsin representatives.

Chapter 1
State Process Overview

State programs that have been delegated primacy by their respective EPA regions receive, process, transmit, and store DMRs and distribute related information to other government agencies and the public. Forty-three states have been delegated primacy for operating and overseeing their NPDES programs. From data we collected and extrapolations made, we determined that states received approximately 650,000 DMRs in 1999. These DMRs were submitted by approximately 155,000 facilities (major and minor) according to 1998 information we researched. The organization of a state program varies by state, but Figure III-1-1 identifies common functions in a data process flow as determined from interviews of Mississippi, Texas, and Wisconsin representatives.

Figure III-1-1. State Data Process Flow



The "as is" state data process flow begins when a facility submits a DMR. The data process flow consists of five primary steps executed by the state regulatory agency staff. The steps, in progression, are *mail receipt*, *data capture*, *data reconciliation*, *data archive*, and *data distribution*. In general, the states process data through information systems, monitor submissions for compliance review, and resolve deficiencies. The states also forward the collected data to the EPA in a

format to input into PCS. The data are also made available in whole or in summary to state government entities to evaluate and determine future policy. The public may also access facility submissions and state compliance databases via information requests and government Web sites.

Chapter 2
State Program Management

PURPOSE

The purpose of state program management is to manage the state's NPDES program, make facility information accessible to the public and government organizations, and provide compliance outreach and assistance to facilities and testing labs to protect the environment and the public.

DESCRIPTION

Program management involves collecting inputs (e.g., compliance and enforcement data), conducting statistical analyses and trend evaluations, and measuring performance to produce outputs. Outputs can include new program policy and regulatory requirements, guidance to the regulated community, Freedom of Information Act (FOIA) reports for public or private consumption, and internal and external reports for government agencies or entities.

A state's ability to manage its NPDES program is determined by the resources it makes available, which affect the efficiency of the overall data process flow. Delegated states implement different organizational and procedural approaches to manage their programs. However, each state performs a core set of functions for processing the submitted data, whether the functions are performed by in-house or contracted staff.

State program management also includes a broad range of oversight and outreach. In addition to the in-house data processing functions, the states provide guidance to facilities and testing labs to improve the data quality of submissions. For example, to improve its program and serve its customers better, Wisconsin's Department of Natural Resources (DNR) surveyed its regulated community to determine electronic reporting preferences. In another case, Mississippi's Department of Environmental Quality (DEQ) is developing an agency-wide approach to data management and plans to transition from using PCS to its own database that will support all agency programs. The new data management system that DEQ is developing is a One-Stop system, which is expected to improve its ability to manage environmental programs, including NPDES.

State NPDES program staff members review performance reports and industry trends to evaluate potential improvements to the overall data process flow and,

therefore, management of their program. Federal and state legislation is monitored for impacts to facility reporting requirements and potential changes in reporting volume and resources needed.

Chapter 3

State Mail Receipt Function

PURPOSE

The purpose of the state mail receipt function is to prepare submissions received from facilities for data processing and, in some cases, archiving.

DESCRIPTION

Figure III-3-1 depicts the state mail receipt function in the overall process.

Figure III-3-1. State Mail Receipt Function in Overall Process

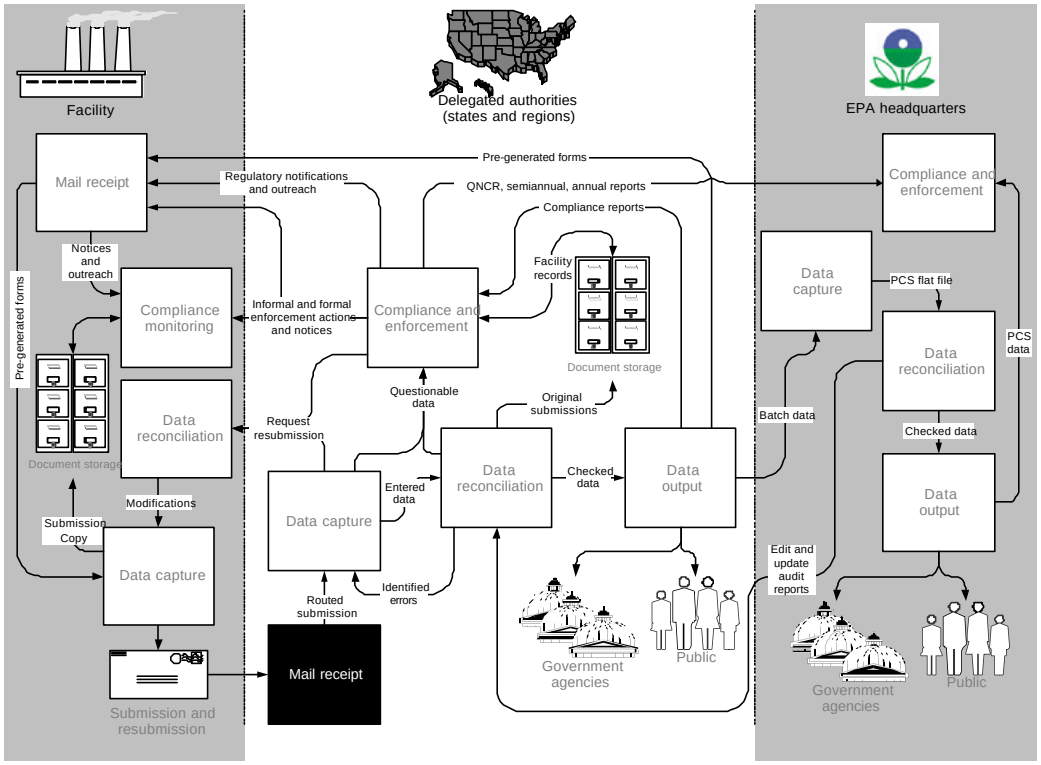
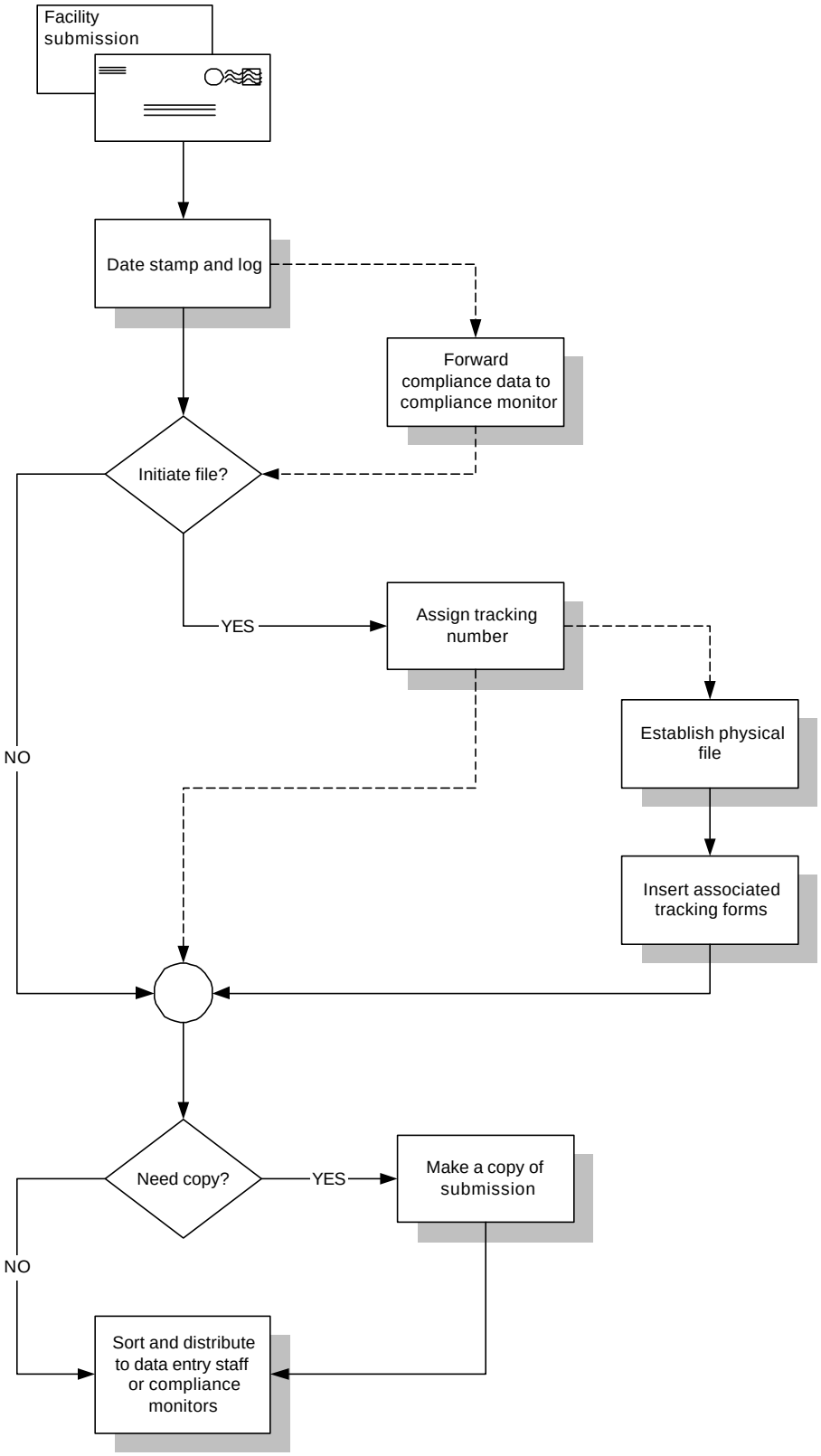


Figure III-3-2 illustrates the "as is" mail receipt process that records a submission received by the state.

Figure III-3-2. State "As Is" Submission Receipt Process



The process begins with the receipt of a facility's DMR submission form. The DMR form is primarily sent through the USPS. The reporting frequency from a facility is usually monthly but can be quarterly, semiannually, or annually, according to its NPDES permit. Unless a facility submits information via certified mail, a submission receipt acknowledgement is not sent to the facility by the state. Of the three states we interviewed, none reported accepting or receiving electronic DMR submissions. In addition, we are not aware of any state or EPA region that accepts or receives electronic DMR submissions as part of its standard operations.

The number of reports that states receive varies seasonally; however, no summary data were available. Based on the states we interviewed, we estimate that the total number of DMRs received ranges from approximately 11,500 to 49,000 per year. We also contacted representatives of other states for similar information. Those states reported the following number of DMRs submitted in 1999: 50,000 for Florida, 31,000 for Kentucky, 2,400 for Michigan, 58,000 for New York, 90,000 for Ohio, and 54,000 for Tennessee.

The reporting frequency was primarily monthly; the next most common frequency is quarterly. Some facilities (e.g., in Texas) report semiannually or annually. Although some discharges by facilities in Wisconsin are monitored daily because of the waste-load allocation for sensitive water bodies, the results are reported monthly. Table III-3-1 summarizes information provided by the interviewed states.

Table III-3-1. DMR Distribution and Receipt Metrics

State	Number of facilities reporting (per year)	Pre-generated forms distributed (per year)	DMRs received (per year)	Monthly (%)	Quarterly (%)	Semi-annual (%)	Annual (%)
Wisconsin	Approximately 8,000 (1999)	12,000	11,500	95	5	0	0
Texas [a]	Approximately 2,800 (1995)	42,308	49,000	N/A	N/A	N/A	N/A
Mississippi	4,597(1999)	25,429	25,429	80	19	1	0

Note: N/A = not available.

[a] Texas numbers include state Monthly Effluent Report program submissions that relate to NPDES.

When correspondence is received, it is date stamped. In general, the date stamped is the one used for determining compliance with submission deadlines; an exception is Texas, which uses the postmark date as the compliance date. Typically, the accompanying shipping envelope with postmark is discarded. Submissions are logged according to the state's standard operating procedures. Receipt logs are usually paper forms.

A state may receive several pieces of correspondence from a facility in addition to DMRs, including a Quarterly Noncompliance Report (QNCR), inspection reports, enforcement actions, permit application information, and other facility

information. The additional information is commonly passed to compliance staff members and is maintained in the facility's file with the submission, but is not necessarily recorded in the compliance database.

States may create a file at this time to prepare the submission for incorporation in the state's facility files. The file serves to facilitate distribution, tracking, and maintenance of facility submissions and other information. A tracking number is usually the permit number and tracking forms may be part of a physical file. Of the states interviewed, none uses software applications to track the processing of submission documents in its office.

SECURITY

Unauthorized data modifications are not likely to occur in state information systems, although data may be entered by the state's staff incorrectly. State information systems are typically not accessible from external systems and may be secured by user passwords. Modifications to state data in PCS are limited to state personnel and require password-protected user access.

Trade or other confidential business information (CBI) is rarely an issue for the interviewed states. The few submittals that contain trade, financial, or other CBI are usually related to permit applications. In these cases, files are secured and access is limited to a few individuals.

The federal regulations for the NPDES's DMR require an authorized signature and certification of truth. This information, in 40 Code of Federal Regulations (CFR) 122.22, includes a definition of who can sign a DMR, the process of signature authority delegation, and the certification of truth statement. Who may sign depends on whether the submitter is part of a corporation, municipality, state, federal, or other public agency, or a partnership or sole proprietorship.

To delegate signature authority, the submitter authorizes signature authority in writing to the EPA or state "director" for an individual or applicable corporate position. If signature authority changes, the original individual with signature authority submits a new authorization to the Director in advance or with any report, information, or application to be signed by an authorized representative. The EPA does not require assignments or delegations of authority to responsible corporate officers; therefore, no individual is predefined unless a delegation of authority is made.

States and regions are responsible for enforcing signature requirements as required by 40 CFR 122.22. Some state laws may require more stringent signature standards and signature verification.

Chapter 4

State Data Capture Function

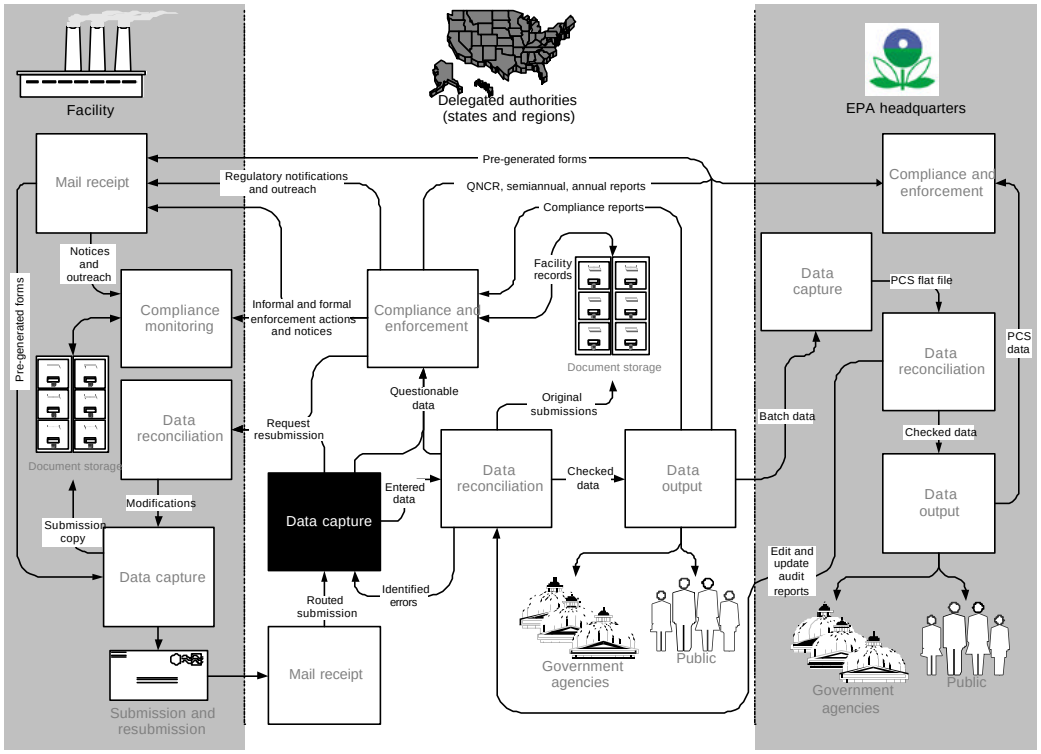
PURPOSE

The purpose of the state data capture function is to capture DMR data in a state database or in PCS.

DESCRIPTION

Figure III-4-1 shows data capture in relation to the overall process.

Figure III-4-1. State Data Capture Function in Overall Process

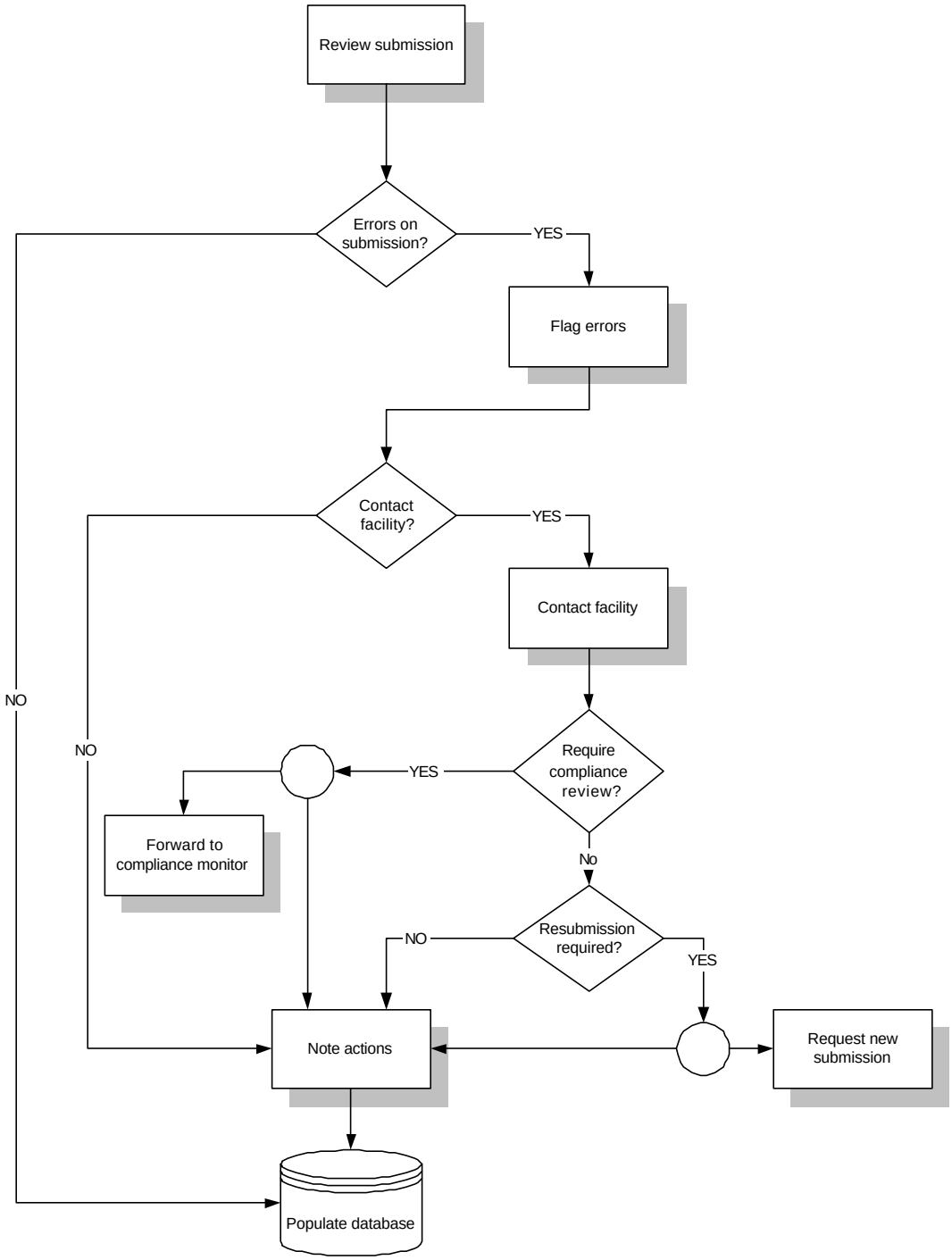


To be sure a DMR can be entered into the database properly, the state typically reviews it for completeness and legibility. Generally, the data clerk identifies a potential discrepancy or omission on the DMR to a compliance staff member. In some processes, compliance staff members perform the initial review of DMR submissions. Submissions are usually made on EPA Form 3220, Discharge Monitoring Report, but may be on a form that has the same format and contains a certification statement. Appendix B contains a copy of a form used in 1999 by

Wisconsin facilities to submit DMR data to the state. The data collected on this form are entered into Wisconsin's information system.

Figure III-4-2 shows how these activities comprise a generically defined data entry process.

Figure III-4-2. State "As Is" Data Capture Process



No authority we interviewed has a process to allow facilities to submit NPDES data electronically. As a result, each form is manually entered into a database. One state's target is to complete data entry within 14 to 30 days of receipt.

The states have several options for DMR information systems to capture data. They may establish an on-line PCS account and use PCS-ADE that allows users to enter data directly into the EPA mainframe using terminal emulation. PC-Entry is a DMR data capture program available from the EPA that writes the entered data to a local file for upload to PCS. For example, Region 6 requires Texas to enter data directly into PCS using PC-Entry or PCS-ADE. Texas enters data daily, but PCS updates are made only twice per week. Wisconsin uploads discharge and compliance information to PCS twice a month using its information system. It can generate batch files of selected data and transfers them to the NCC for loading into PCS. The state may also create a dedicated information system for NPDES program data. Another option is for the state to integrate NPDES functions into an information system that manages more than one environmental program for the state; Mississippi expects to use this approach in developing and implementing its One-Stop information system.

Questions about submissions are typically annotated, and the state determines if the facility needs to be contacted. The percentage of submissions that requires contact with the submitters for accuracy checks or corrections is not known; however, from the information gathered as part of this study, approximately 2 percent of submissions cannot be processed. Another 10 percent have errors that affect data entry, and another 20 percent have errors that do not affect data entry. Some noted problems in processing forms include the following:

- Use of an invalid form
- Missing pages
- Missing or incomplete facility information
- Missing or incomplete parameter information
- Mismatch between parameter name and coded number
- Missing values and measures
- Facility not subject to reporting requirements.

In some instances, egregious and systemic problems with a facility's submissions may lead to a review by compliance and enforcement officials. Often the facility merely has to resubmit its report with the errors corrected. Questions, comments, and decisions regarding a submission are noted in the facility's file. None of the states interviewed records the volume or frequency of exception submittals and revisions or the types of errors and corrections. The Wisconsin DNR affirms that its laboratory certification and registration program has dramatically improved data quality and, therefore, reduced the need for DMR resubmission. Even when a state has questions about a DMR, information that can be keyed into the database

is entered to ensure the current submission is on record to avoid improper non-submittal notices.

For duplicate submissions or resubmissions, the most recent version is regarded as the final submittal; the previous version is overwritten electronically in the database. However, both original and revised paper submissions are maintained. No follow-up is made unless errors are noted or a submission is not received. Occasionally, internal audits are performed of the data entry process; the frequency varies by state.

Chapter 5

State Data Reconciliation Function

PURPOSE

The purpose of the state data reconciliation function is to identify and correct errors before the transfer of the data to PCS.

DESCRIPTION

The data reconciliation process in relation to the overall data process flow is represented in Figure III-5-1.

Figure III-5-1. State Data Reconciliation Function in Overall Process

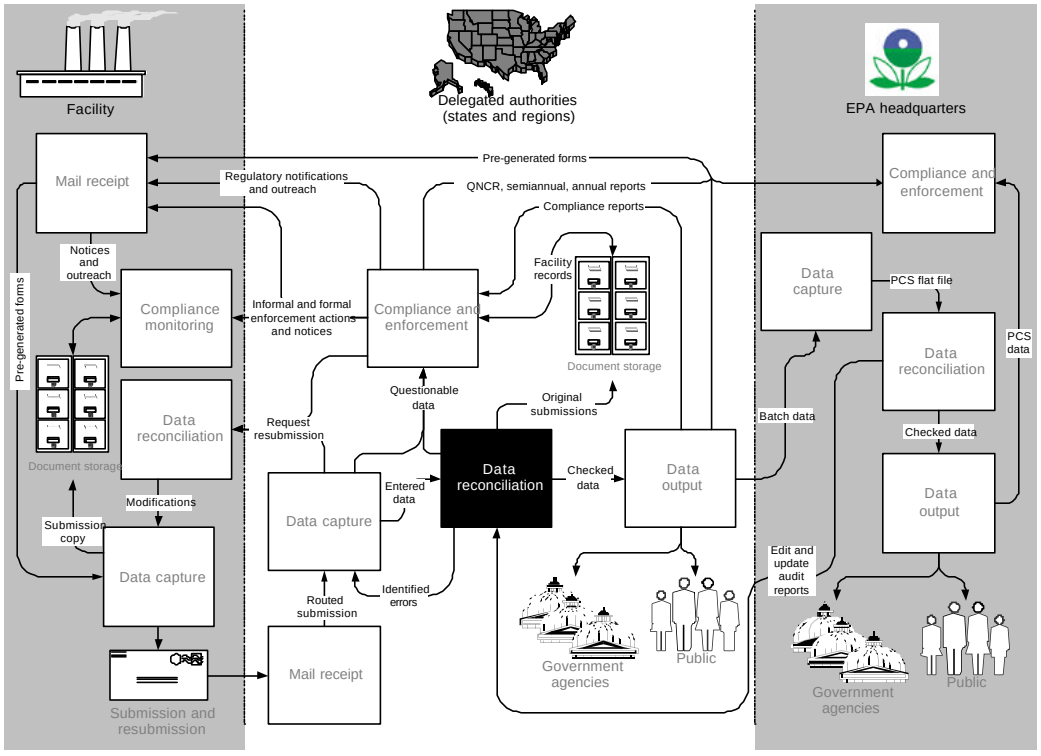
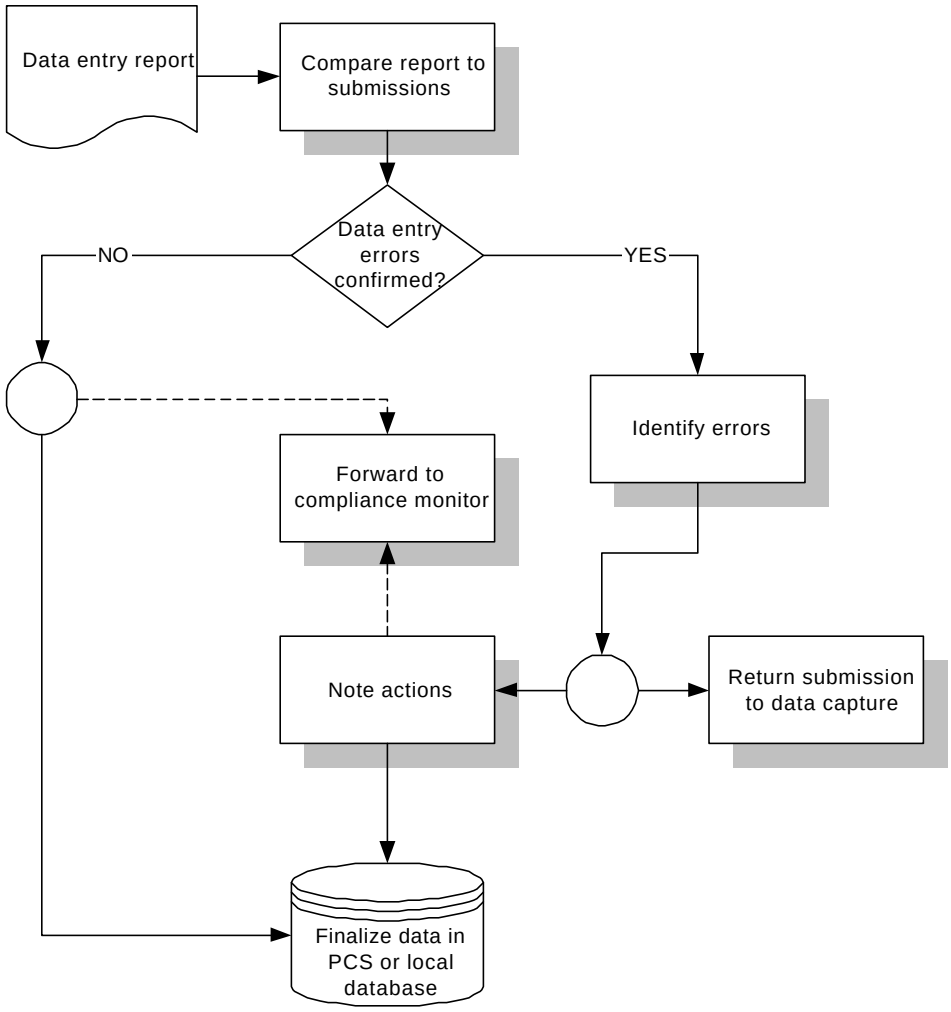


Figure III-5-2 presents the process flow for reconciling data. On-line PCS users receive edit checks after each record is completed. State information systems may program the database to identify errors. Another option is to run a “dummy” edit of the entered data and use PCS to create an Edit Audit Report (see Appendix C). The staff can compare the report to the actual submissions to identify potential data entry errors.

Figure III-5-2. State "As Is" Data Reconciliation Process



If data entry errors are identified, they are marked, and the overall process flow returns to the data capture function for corrections. Even when submissions are entered properly, the state may identify concerns with a submission that may require review by compliance monitors. For example, the submission may indicate a facility is not reporting a sampling type or frequency that is in accordance with its permit. When all errors are corrected, the data are finalized in the state's database for transfer to PCS.

Occasionally, PCS generalized retrievals are run and audits conducted for quality assurance. However, states routinely receive audit reports on all dummy and live edits and perform quality control continuously. Generally, PCS data provide a framework for audits of stored records, which are performed quarterly or semiannually by in-house staff and in concert with regional audits.

Chapter 6

State Data Archive Function

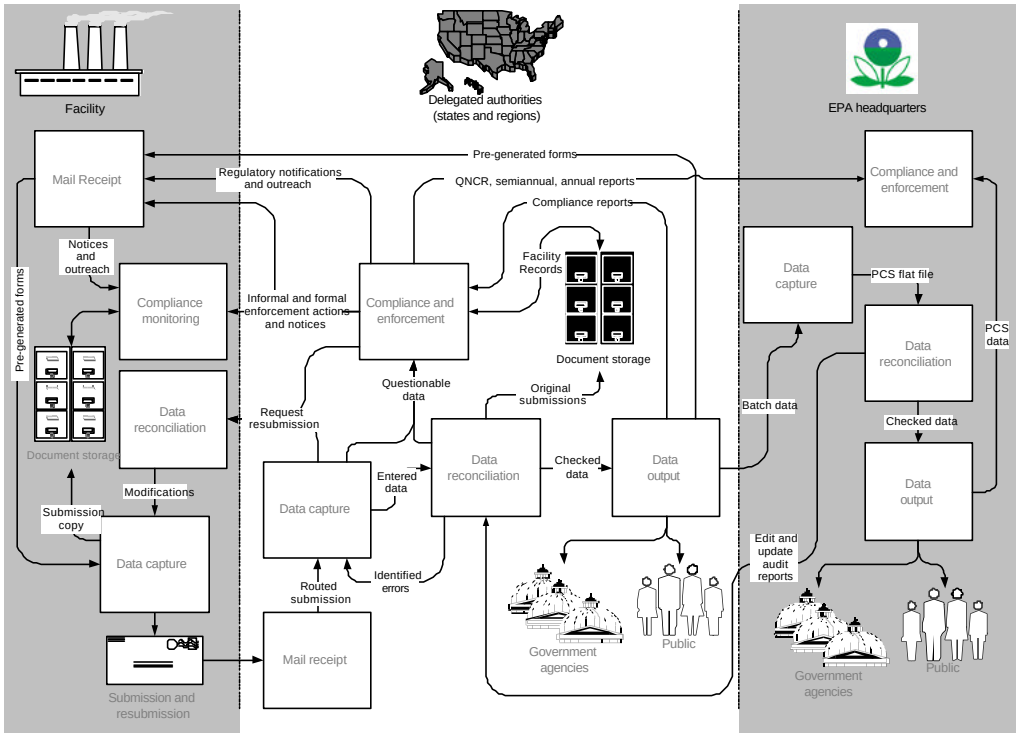
PURPOSE

The purpose of the state data archive function is to ensure that original, current, and historical submission-related documents are maintained in files for the required period.

DESCRIPTION

While all data are entered in databases, the copy of record is still the paper submission because the signature of the submitter is on the paper document. Therefore, all original submissions are maintained in files for the required period, generally 5 years. In addition, supplemental documents (e.g., inspection reports, enforcement actions) generally are maintained in the files with the NPDES submission. The data archive function in relation to the overall process flow is represented in Figure III-6-1.

Figure III-6-1. State Document Data Archive Function in Overall Process



Document archiving locations are sometimes shared by program areas, and their operations may be contracted. All NPDES-related submission documents are stored in the format in which they are received (with the exception of their mailing envelopes, which may be discarded). The states interviewed do not accept electronic submissions; therefore, they do not archive electronic data of DMRs.

Submissions are stored for 5 years at a location that may be on- or off-site. Inventory audits of stored documents are made but are not recorded. After 5 years, records generally are sent to a state or federal records center for storage.

Whether storage is on- or off-site, CBI, trade secret, or financially sensitive information is stored by secured means. In general, CBI issues are not common except for permit application data.

To allow for the varying approaches to document storage, Figure III-6-2 shows possible procedures some state authorities have established for requisitioning and submitting documents.

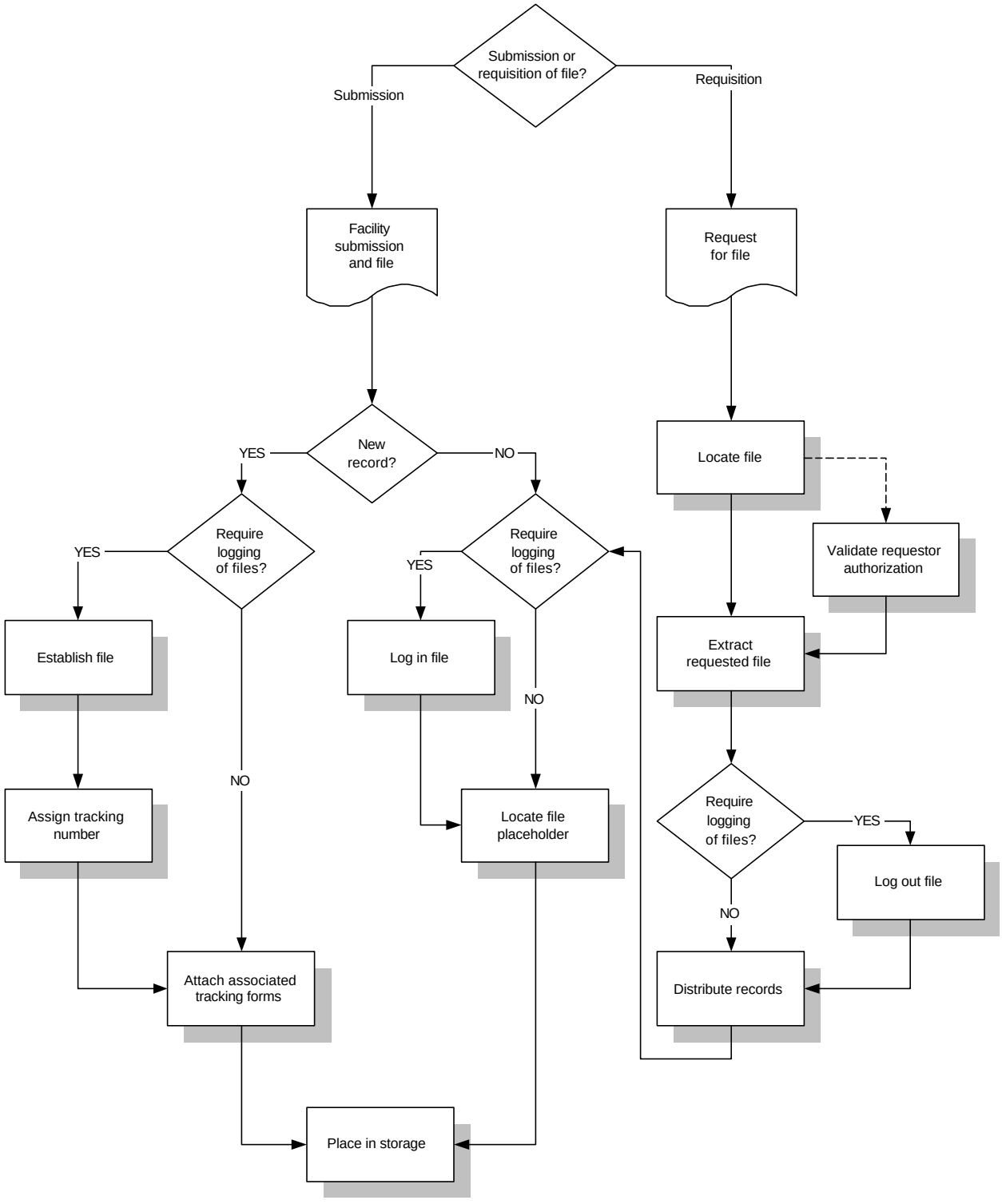
Requisition

The document storage process flow begins with a submission of a request for a facility's file. Typically, the information required of a requestor is the permit identification number and desired reporting period.

Fulfilling the request for a submission begins with locating the physical file and extracting the requested records. A placeholder is sometimes used to facilitate the file's return to storage. The requestor's authorization to access the data may be verified before the requested records are removed. Some states may require formal log out of the records before distribution. The document archiving requisition process continues with distribution of the records. After the requestor's review is complete, the records are logged in (if required), the file placeholder is located, and the records are returned to storage.

Files and the information contained in them are removed for all requestors. Distribution of file information is limited to the information requested. For requests within the agency, copies of the file contents generally are not made before distribution. Although copies are made to satisfy FOIA requests, no software applications track distributed data. Distributions are made as files are requested. Records are not maintained on requests for submissions.

Figure III-6-2. State "As Is" Data Archive Process



Submission

Submitting facility records for storage depends on whether the record is new or a file exists. Submission of information into an existing facility file involves locating the file and placing it in storage. Logging in the information is required by some states. If submission of information from a new facility requires a log in of records, at this point in the process some states establish a physical file, assign a tracking number, and attach tracking forms to the file before placing it in storage. If log in of information is not required, some states simply attach associated tracking forms before placing the file in storage.

Chapter 7

State Data Distribution Function

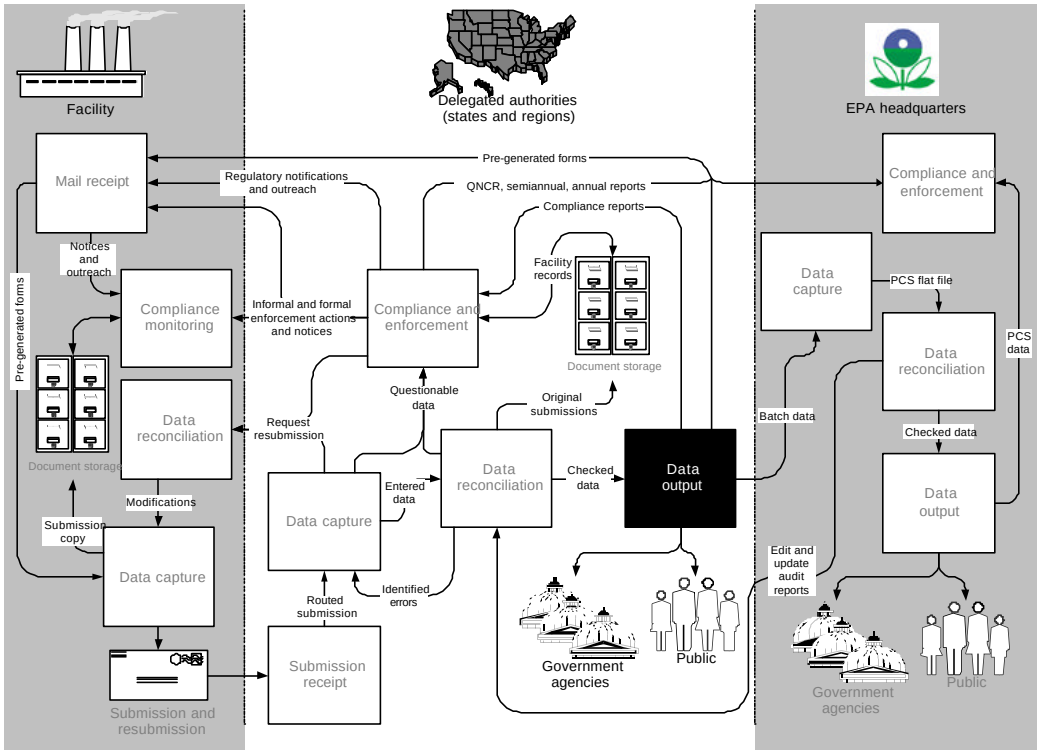
PURPOSE

The purpose of the state data distribution function is to assist with managing the NPDES program, keep the public and private sector informed, and prepare data from local systems for upload to PCS.

DESCRIPTION

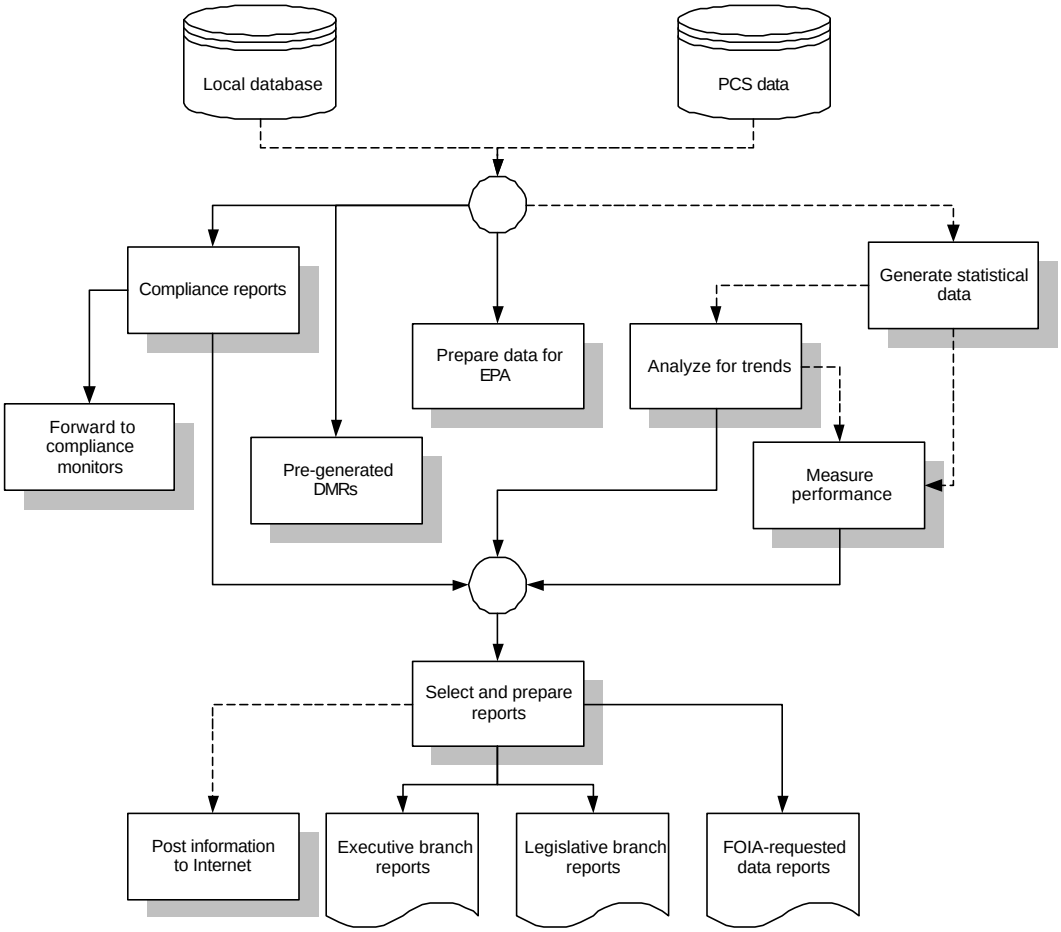
Figure III-7-1 depicts the distribution process in the overall data process flow.

Figure III-7-1. State Data Distribution Function in Overall Process



As represented in Figure III-7-2, states may rely on a local database or PCS to generate outputs.

Figure III-7-2. State "As Is" Data Distribution Process



DMR forms are generated through database retrievals, whether they are in a local database that contains the facility information or the PCS database. Facilities, with state approval only, may develop and submit their own forms if the DMR conforms to a state's specifications. The pre-generated, blank DMRs (i.e., contain basic facility and sampling protocol information but not specific laboratory results) may be sent to the reporting facility in batches (often quarterly or annually) or on a one-time basis to cover the life of the NPDES permit, which is usually 5 years. Pre-generated forms may also be sent when permits are reissued or modified. The forms are sent via USPS, usually by standard mail, but may be sent by certified mail for tracking purposes. In accordance with state procedures, pre-generated DMRs may be compared by the issuing agency's compliance specialist to the permits before distribution to ensure accuracy.

Unless the state enters its data through on-line access to PCS, it needs to send the data to PCS in batch files. PCS requires that the batch data be formatted into a positional file structure resembling an 80-column card format. PC-Entry automatically outputs a file created to match the PCS input format. States that have their own databases script an application interface program to organize their DMR data into the PCS input format before transmission.

Reports (i.e., queries) generated from local databases and PCS may be used for reviewing data compliance (e.g., data for a state's QNCR) and evaluating the program. Some statistical reports may also be used for evaluating trends in the program or the performance of the agency. Often the evaluated data are used to prepare reports for the executive and legislative branches of state or federal government, or special reports to internal offices.

In general, the government databases are public information and, therefore, are available for review except for inspection schedules and pending enforcement actions. Reports may be generated in response to requests from the public, manufacturers, and businesses. Reports and or other data may be posted to state Internet sites. In particular, data outputs from PCS are available from the National Technical Information Service (NTIS) and included in the chapter on the federal data distribution function in Part V (Chapter 7) of this report.

Chapter 8
State Information System

States have the option of using PCS as their compliance-tracking system or develop their own databases. A state that uses PCS as its database saves personnel and financial resources because EPA pays for the development and maintenance cost. The states can only enter information that PCS is prepared to accept, and they have only a limited ability to customize their entries.

As more states have taken primacy in recent years, they have been developing their own compliance systems. States develop their own compliance databases to reflect specific reporting requirements of the state, allow data integration with other environmental programs in the state, or provide other functionalities not available in PCS.

The state compliance systems have the following roles:

- Maintain an inventory of NPDES permittees
- Provide data for state legislatures and the general public
- Support effective NPDES program implementation
- Promote sound planning, evaluation, and decision-making
- Facilitate the use of NPDES-reported data.

Chapter 9

State Compliance and Enforcement

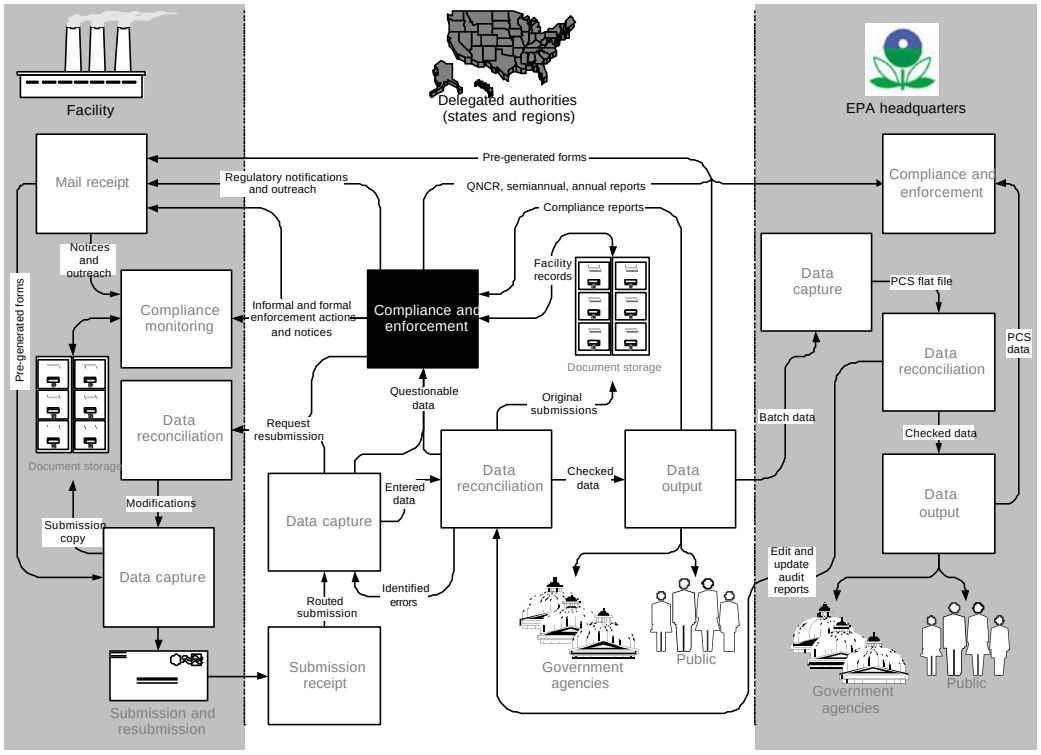
PURPOSE

The purpose of the state compliance and enforcement actions is to monitor reported data to ensure that NPDES permit requirements are met by the permit holders.

DESCRIPTION

During DMR submission processing, a NPDES specialist may identify potential compliance issues and follow up on apparent deficiencies. Figure III-9-1 depicts the state compliance-monitoring activities in the overall data process flow.

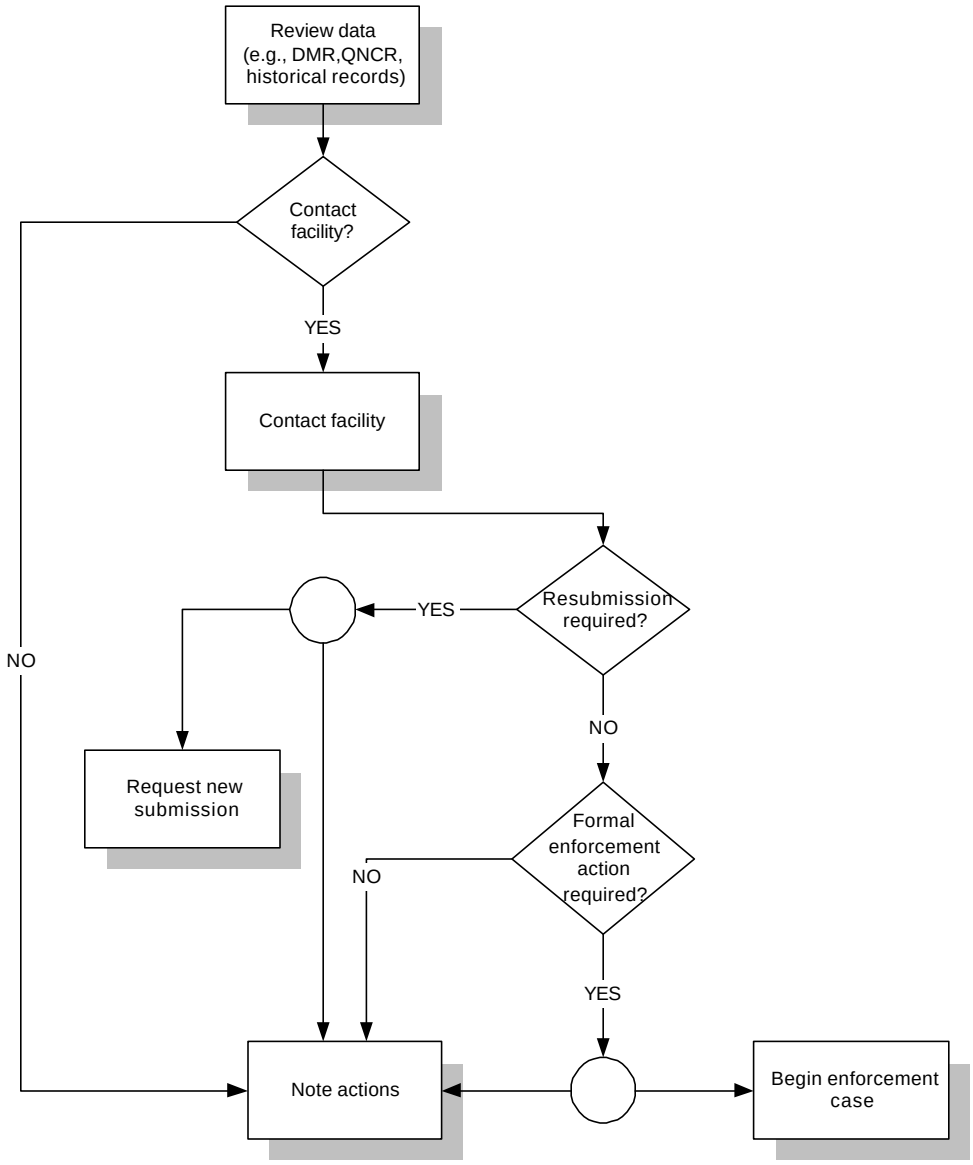
Figure III-9-1. State Compliance-Monitoring Process



COMPLIANCE

Specialists who monitor facility compliance use DMRs and other data reports to identify or verify potential compliance challenges. All problems do not require enforcement actions. States provide guidance or leave the decisions to the specialist on how compliance monitors should determine the need for further action, including enforcement. Figure III-9-2 illustrates a generic process that a compliance specialist may follow in reviewing submissions that may have errors or not be compliant.

Figure III-9-2. State "As Is" Submission Review Process



In attempting to resolve questions or determine the correct course of action, a specialist may review permit information and past dealings with a facility. The specialist may request the submitter correct their DMR and resubmit it. If the specialist is not permitted or is unable to determine corrective action, he or she may recommend the best course of action for resolution to compliance and enforcement personnel. Many issues are handled and resolved through informal means, such as a telephone call. Others require documented enforcement actions.

If a facility fails to submit one entire DMR, it is considered a significant noncomplier. An action will be taken even if it is only a phone call or other informal enforcement action. When reviewing a problematic submission in light of a facility's history, a specialist may recommend or initiate enforcement actions.

ENFORCEMENT

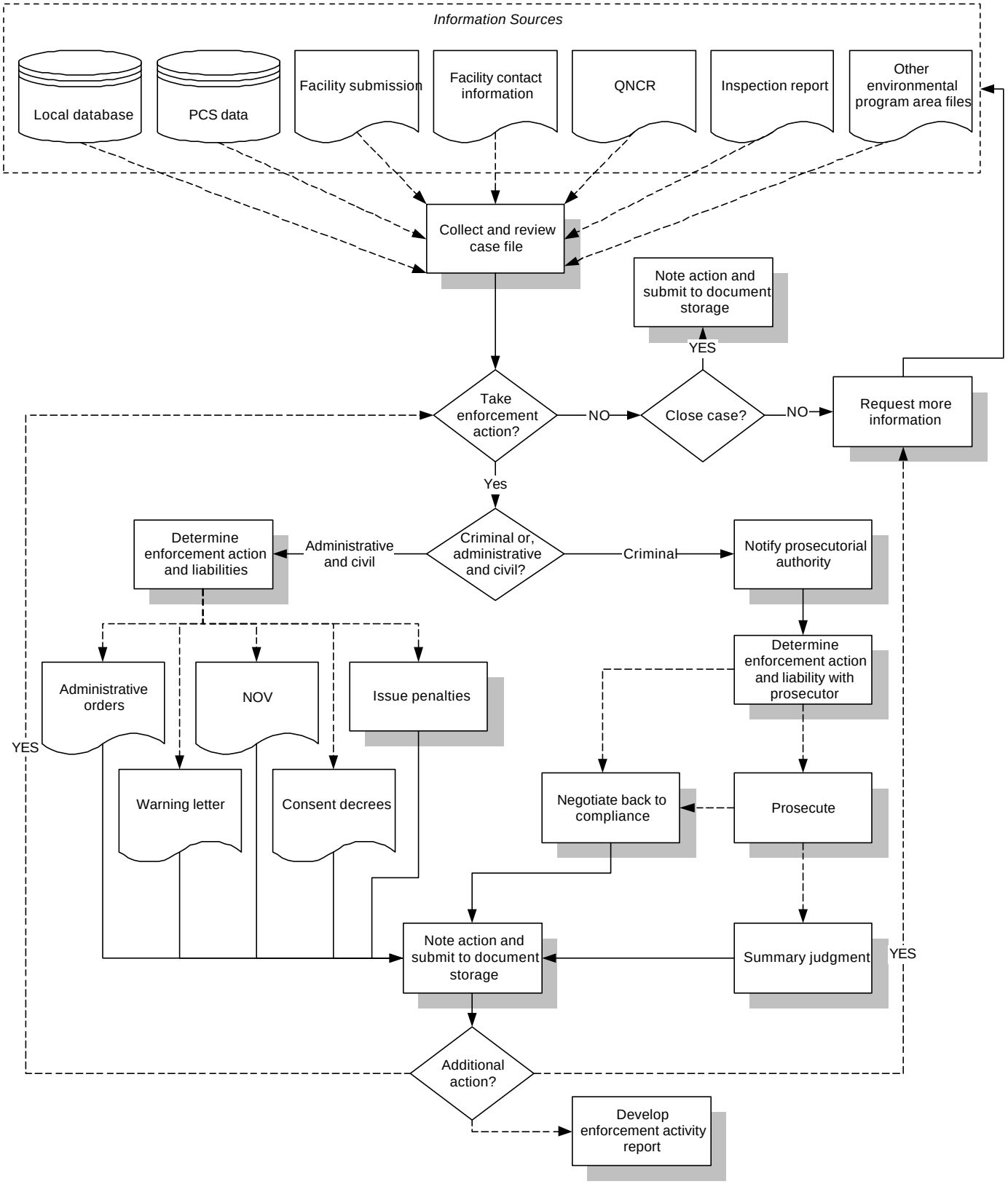
Delegated states have discretion in determining the appropriate action to take when a facility violates its NPDES permit. Violations related to compliance submissions include failing to report, reporting incompletely or inaccurately, and being in violation of NPDES permit limits. States handle each violation on a case-by-case basis and consider a facility's circumstances and reporting history.

If enforcement action is initiated, a case history will be developed that shows the facility's inability or unwillingness to improve its compliance record. To evaluate the progress of violators in improving their compliance records, delegated states rely on data provided by facility submissions, inspections, conversations with the facility representatives, and information from other environmental program areas.

Figure III-9-3 presents a generic flow for the progression of enforcement decisions and actions by a state.

Periodically, the delegated authority reviews the files of violators and determines if the state has enough information to permit closing the case or require action by the state. If the information is not sufficient, the case file remains open until further information can lead to a determinate action. If further enforcement consideration is unnecessary, the file most likely will be closed. If enforcement action is required, the state needs to select civil or criminal actions.

Figure III-9-3. State "As Is" Enforcement Process



Typical state enforcement actions include the following:

- Warning letters to inform a facility that escalated enforcement action is possible
- Administrative orders that issue steps the facility must take
- Notice of Violation (NOV) that explains violations and requirements to return to compliance
- Consent decrees that provide a legal ruling for returning to compliance
- Issue penalties.

Criminal actions are typically the responsibility of the state attorney. The state attorney works with the state environmental office to identify laws a facility may be violating and files charges.

In Wisconsin in 1997 and 1998, the total number of NOVs issued was 28 and 56, respectively. From these NOVs, 21 and 41 offenders were required to attend enforcement conferences with the state in 1997 and 1998, respectively. No similar enforcement data were available from Texas or Mississippi.

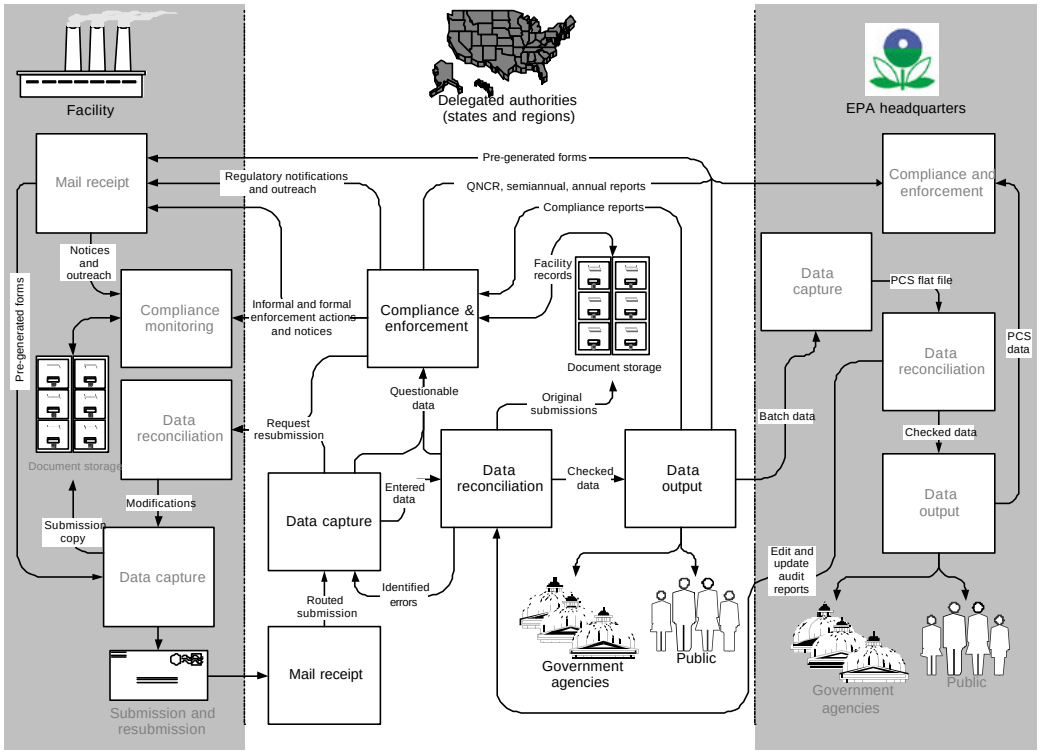
Part IV
Region

Part IV explains the “as is” process for a region. The chapters in this part describe the general reporting process, including reporting scenarios, mechanisms, and processing functions.

Chapter 1
Region Process Overview

EPA regional offices act as the NPDES data collection points for facilities operating in nondelegated states, tribal lands, territories, and off-shore facilities in U.S. waters. Although regions do not expand on federal reporting requirements, they have autonomy in determining their organizational structure and operating procedures, which is based on their relationship with the states. Some regions (e.g., Region 4) oversee few facilities because their states have been granted primacy for administering the NPDES program. Other regions (e.g., Region 6) receive DMRs from many more facilities. Regardless of the region's level of data collection, the general functions for collecting NPDES compliance reports are similar to those performed by delegated states as Figure IV-1-1 shows.

Figure IV-1-1. Regional Data Process Flow



Where the region is the regulatory authority, the "as is" data process flow begins when a facility submits a DMR. The data process flow consists of five primary steps executed by the regional staff. The steps, in progression, are *mail receipt, data capture, data reconciliation, data archive,* and *data distribution.* For the regions we interviewed, the typical time to process DMR submissions ranges from 5 to 10 workdays. We noted, however, that 30 days are allotted to enter the data before a violation is generated in PCS. PCS is the information system that supports the regions' NPDES activities. The regional staff monitors the submissions

to identify possible noncompliant activities, clarify discrepancies, and monitor facility reporting. The regions make their data available to other government agencies and the public in response to information requests. The data are also used to evaluate and determine future policy.

For the delegated states, the regions are responsible for playing a role in overall program oversight and training. In these cases the regions monitor the states' NPDES programs, including reporting, compliance, and enforcement efforts.

Chapter 2
Region Program Management

PURPOSE

The purpose of region program management is to give the region the ability to manage its NPDES program, provide oversight to state programs, make facility information accessible to the public and government organizations, and provide compliance outreach and assistance to regulated facilities and testing labs.

DESCRIPTION

Program management involves collecting inputs (e.g., financial reporting, compliance, and enforcement data), conducting statistical analyses and trend evaluations, and measuring performance to produce outputs. Outputs can include new program policy and regulatory requirements, guidance to the regulated community, FOIA reports for public or private consumption, and internal and external reports for government agencies or entities.

A region's ability to manage its NPDES program is determined by the resources it makes available, which can affect the efficiency of the overall data process flow. Regions implement different organizational and procedural approaches to manage their programs. However, each region performs a core set of functions for processing the submitted data, whether the functions are performed by in-house or contracted staff.

Regional program management also includes a broad range of oversight and outreach. Regions (e.g., Region 4) that have few facilities reporting to them may have few personnel, and they can be equally focused on submission processing and oversight activities. Region 6 processes DMRs for New Mexico and selected facilities in the region. The processing functions for data entry and reconciliation functions, data archive, and compliance and enforcement are performed by staff members. They may also assist with oversight activities, such as evaluating a delegated state's document storage system.

Regional NPDES program staff members review performance reports and industry trends to evaluate potential improvements to the overall data process flow and, therefore, management of their program. Federal legislation is monitored for impacts to facility reporting requirements and potential changes in reporting volume and resources needed.

Chapter 3

Region Mail Receipt Function

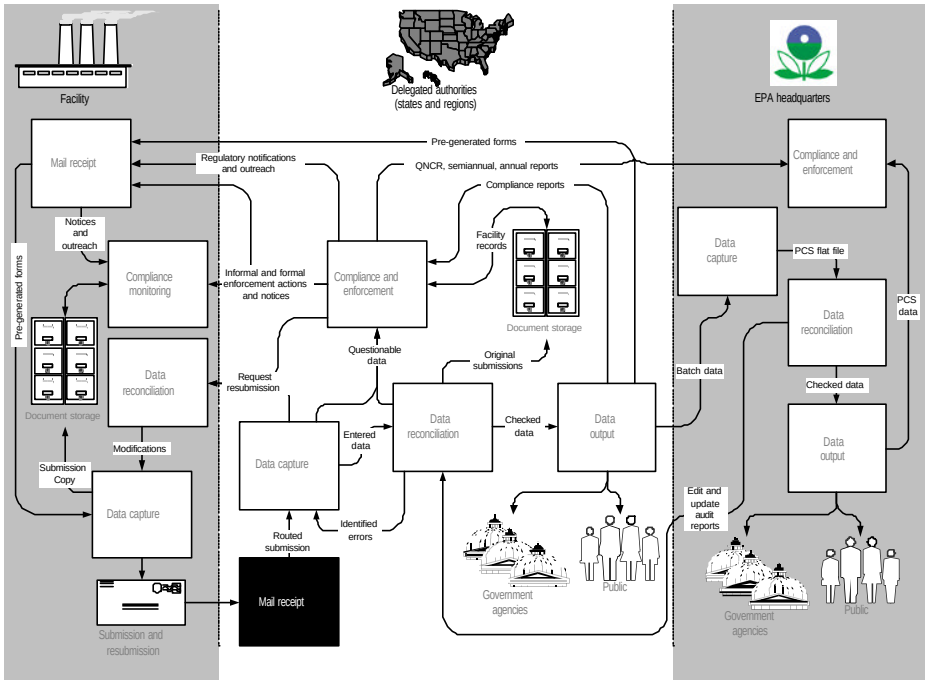
PURPOSE

The purpose of the region mail receipt function is to log in the submissions received from facilities and prepare the submissions for data processing, tracking, and storage.

DESCRIPTION

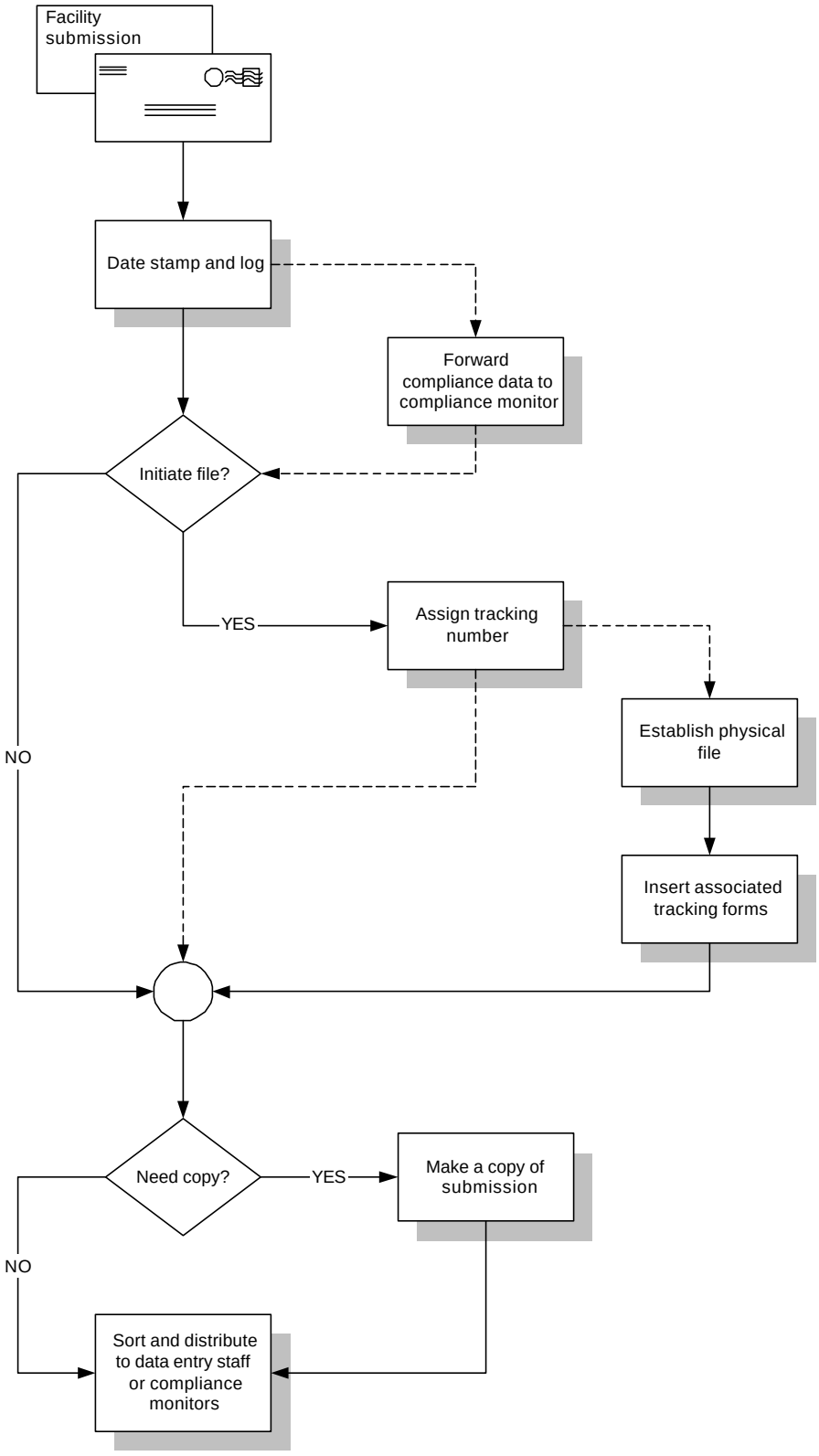
DMR forms are submitted on paper and are usually sent to the regions through the USPS. The reporting frequency from a facility is usually monthly but can be quarterly, semiannually, or annually according to its NPDES permit. The receipt of a facility's submission is not automatically acknowledged unless sent by certified mail. Sometimes a facility mistakenly mails a submission to the region instead of the delegated state. The region simply routes the submission to the appropriate state office. Figure IV-3-1 displays the mail receipt function in relation to the overall data process flow.

Figure IV-3-1. Region Submission Receipt Process



The “as is” mail receipt process is depicted in Figure Figure IV-3-2.

Figure IV-3-2. Region “As Is” Submission Receipt Process



Regions date stamp the submission and typically discard the envelope. The number of annual submissions processed by the regions interviewed is in Table IV-3-1. The date stamp is the one used for determining compliance with submission deadlines. Region 6 uses its own paper tracking forms and retains them in facility files. Inspection reports, enforcement required actions, permit application information, and other facility information may be included with a DMR submission. The additional information is commonly provided to compliance staff members and is maintained in the facility's file with the submission, but is not necessarily recorded in the compliance database.

Table IV-3-1. Annual Submissions

Region	Annual DMRs received (estimated)
Region 2	2,300
Region 4	900
Region 6	50,000

Regions may create a physical file for the submission. The file serves to facilitate distribution, tracking, and maintenance of facility submissions and other information. A tracking number is usually the permit number and tracking forms may be part of a physical file. No region interviewed uses software applications to track the process flow of submission documents in its office, although Region 6 does track DMRs received according to the reporting schedule for a permit and its outfalls (see Appendix D).

SECURITY

Unauthorized data modifications are not likely to occur in regional information systems, although data may be entered by the region's staff incorrectly. Modifications to a region's data on PCS is limited to the region's personnel and require password-protected user access.

Trade or other CBI are rarely issues for the interviewed regions. The few submittals that contain trade, financial, or other CBI are usually related to permit applications. In these cases, files are secured and access is limited to a few individuals.

The federal regulations for the NPDES's DMR require an authorized signature and certification of truth. This information, in 40 CFR 122.22, includes a definition of who can sign a DMR, the process of signature authority delegation, and the certification of truth statement. Who may sign depends on whether the submitter is part of a corporation, municipality, state, federal, or other public agency, or a partnership or sole proprietorship.

To delegate signature authority, the submitter authorizes signature authority in writing to the EPA or state "director" for an individual or applicable corporate

position. If signature authority changes, the original individual with signature authority submits a new authorization to the director in advance or with any report, information, or application to be signed by an authorized representative. The EPA does not require assignments or delegations of authority to responsible corporate officers; therefore, no individual is predefined unless a delegation of authority is made.

States and regions are responsible for enforcing signature requirements as required by 40 CFR 122.22. Some state laws require more stringent signature standards and signature verification.

Chapter 4

Region Data Capture Function

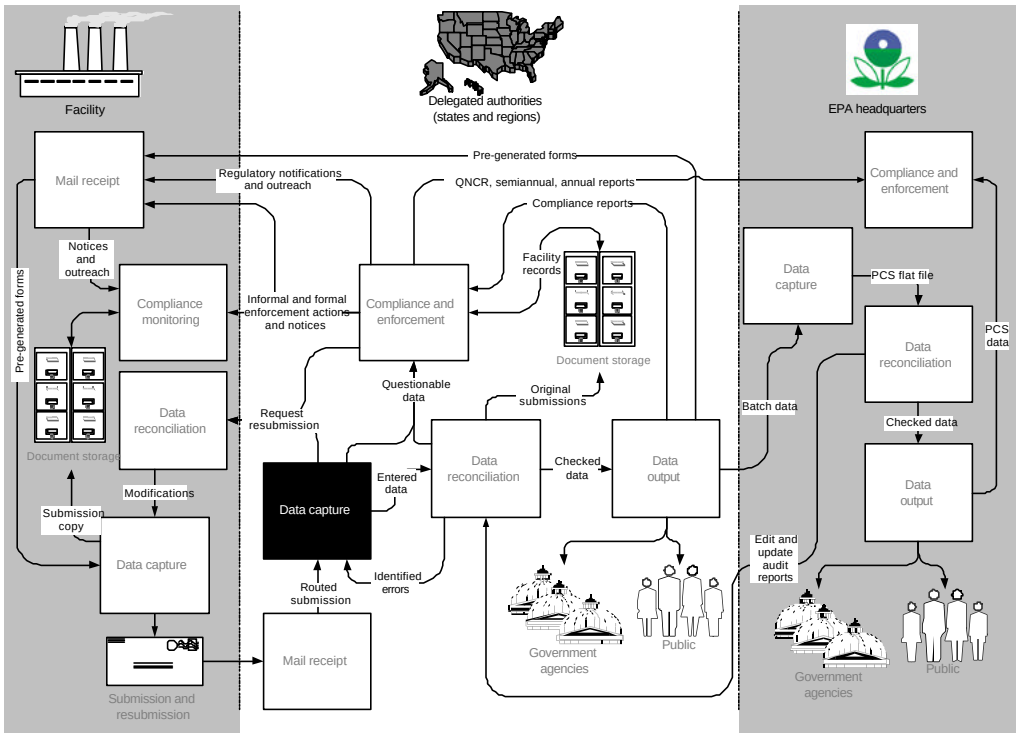
PURPOSE

The purpose of the region data capture function is for the regions to capture submitted data into PCS.

DESCRIPTION

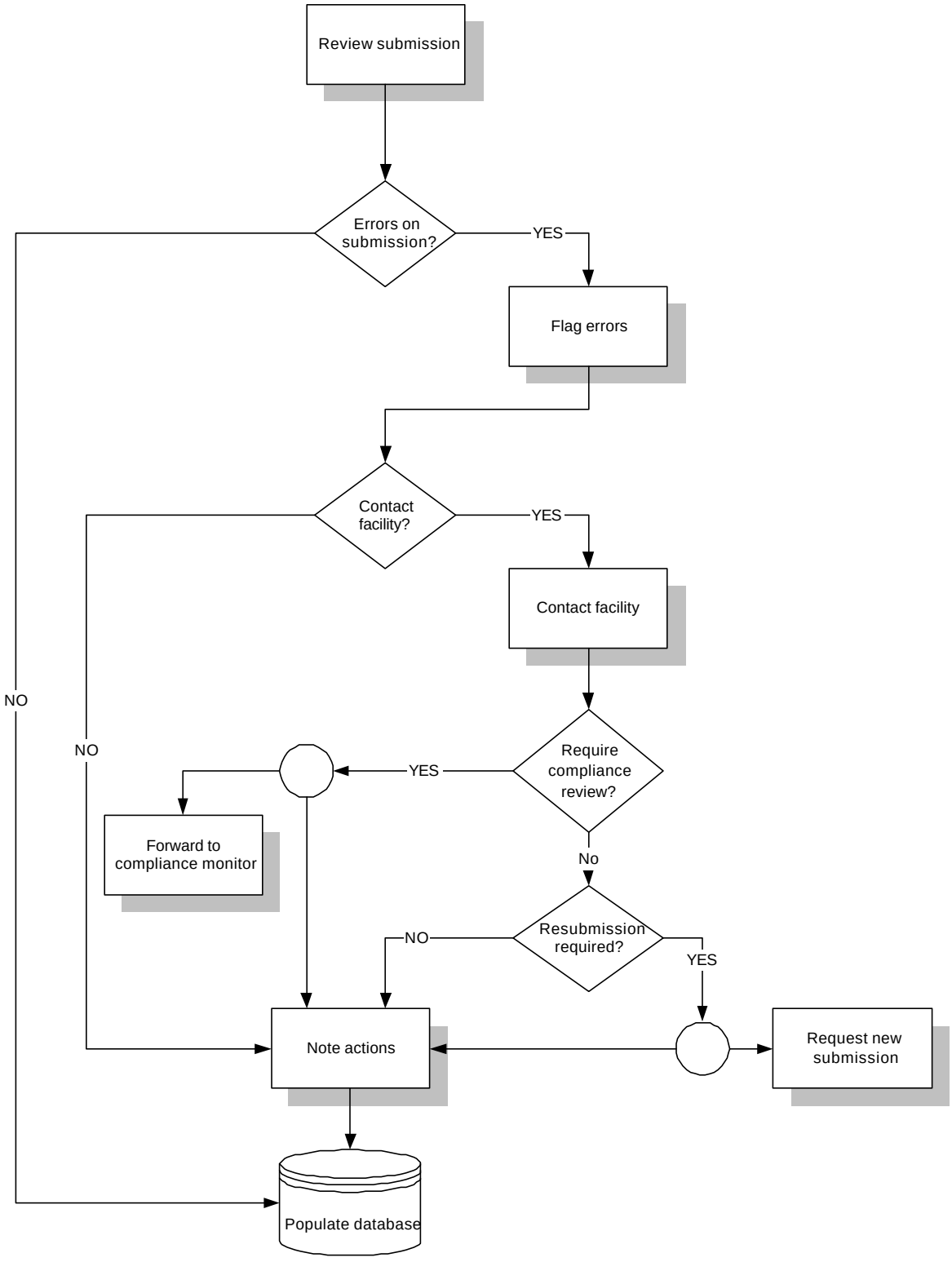
Figure IV-4-1 shows data capture in relation to the overall process.

Figure IV-4-1. Region Data Capture Process



To be sure a DMR can be entered into the database properly, the region typically reviews it for completeness and legibility. This activity may be formal for some authorities. For example the staff of, EPA Region 6 reviews a submission for completeness, signature authority, and monitoring period. In general, the data clerk will identify a potential discrepancy or omission on the DMR to a compliance staff member. Figure IV-4-2 shows how these activities comprise a generically defined data capture process for regulatory authorities.

Figure IV-4-2. Region "As Is" Data Capture Process



The regions do not allow facilities to submit NPDES data electronically. As a result, each form is manually entered into a database. Regions have two options for DMR information systems to capture data. They may establish an on-line PCS account and use PCS-ADE that allows users to enter data directly into the EPA mainframe using terminal emulation. PC-Entry is a DMR data capture program available from EPA that writes the entered data to a local file for upload to PCS.

Questions about submissions are typically annotated, and the region determines if the facility needs to be contacted. The percentage of submissions that requires contact with the submitters for accuracy checks or corrections is not known; however, from the information gathered as part of this study, approximately 2 percent of submissions cannot be processed. Another 10 percent have errors that affect data entry, and another 10 percent have errors or violations (e.g., missing data). Some noted problems in processing forms include the following:

- Use of an invalid form
- Missing pages
- Missing or incomplete facility information
- Missing or incomplete parameter information
- Mismatch between parameter name and number
- Missing values and measures
- Facility not subject to reporting requirements.

In some instances, egregious and systemic problems with a facility's submissions may lead to a review by compliance and enforcement officials. Often the facility merely has to resubmit its report with the errors corrected. Questions, comments, and decisions regarding a submission are noted in the facility's file. None of the regions interviewed records the volume or frequency of exception submittals and revisions or the types of errors and corrections. Even when a region has questions about a DMR, information that can be keyed into the database is entered to ensure the current submission is on record to avoid improper nonsubmittal notices.

For duplicate submissions or resubmissions, the most recent version is regarded as the final submittal; the previous version is overwritten electronically in the database. However, both original and revised paper submissions are maintained. No followup is made unless errors are noted or a submission is not received. Occasionally, internal audits are performed of the data entry process; audit frequency varies by region.

Chapter 5

Region Data Reconciliation Function

PURPOSE

The region data reconciliation function identifies and corrects errors before the data are transferred into PCS.

DESCRIPTION

Data reconciliation in relation to the overall data process flow is represented in Figure IV-5-1.

Figure IV-5-1. Region Data Reconciliation in Overall Process

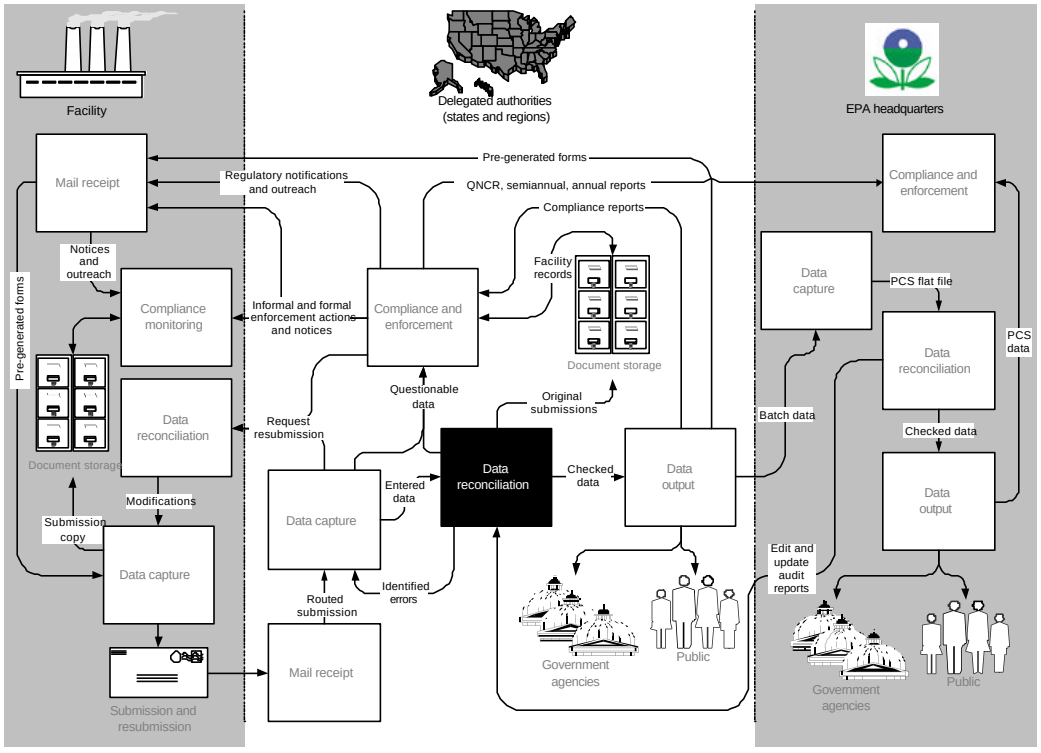
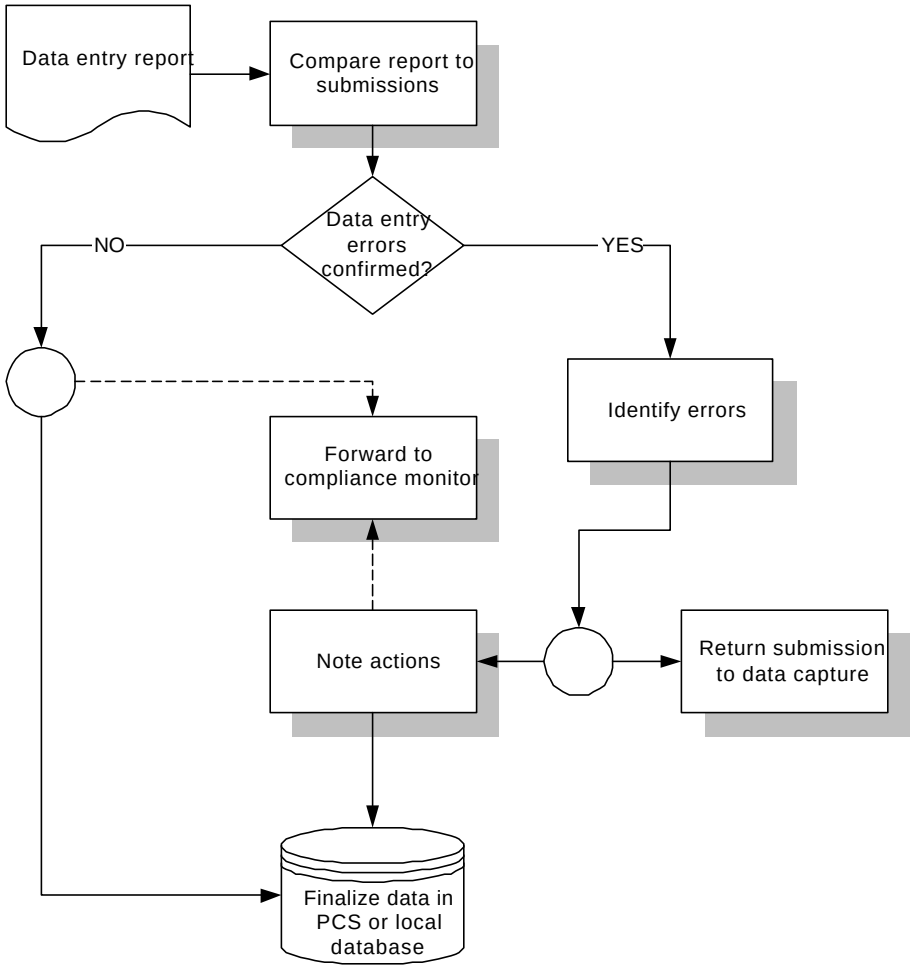


Figure IV-5-2 shows the process flow for reconciling data. On-line edit checks are performed after each record is completed. PC-Entry data are submitted in batches to PCS to run a “dummy” edit of the entered data and generate an Edit Audit Report (see Appendix C). The dummy edit sends the collected data to PCS, where it is checked, but does not update PCS. PCS processes the transmitted data and returns the edit report. The region can compare the edit report to the actual

submissions to confirm that potential problems found by PCS are in the original submissions.

Figure IV-5-2. Region "As Is" Data Reconciliation Process



If data entry errors are identified, they are marked, and the overall process flow returns the data to the data capture process to be corrected. Even when submissions are entered properly, edit reports may identify concerns with a submission that may require compliance review. For example, the edit report may indicate that a facility is not reporting a parameter in accordance with its permit.

Similarly, a "live" edit will produce an update audit report. However, the live edit results in records being added to or updated in PCS.

Occasionally, reports are run and audits conducted for quality assurance. In Region 6, these reports are known as PCS generalized reports. When reconciling data, Region 6 uses the PCS generalized reports. Edit audit reports are run after every PCS update and all rejected messages are researched and corrected. In general, PCS data are the framework for audits, which are performed quarterly or semiannually, usually by in-house staff.

Chapter 6

Region Data Archive Function

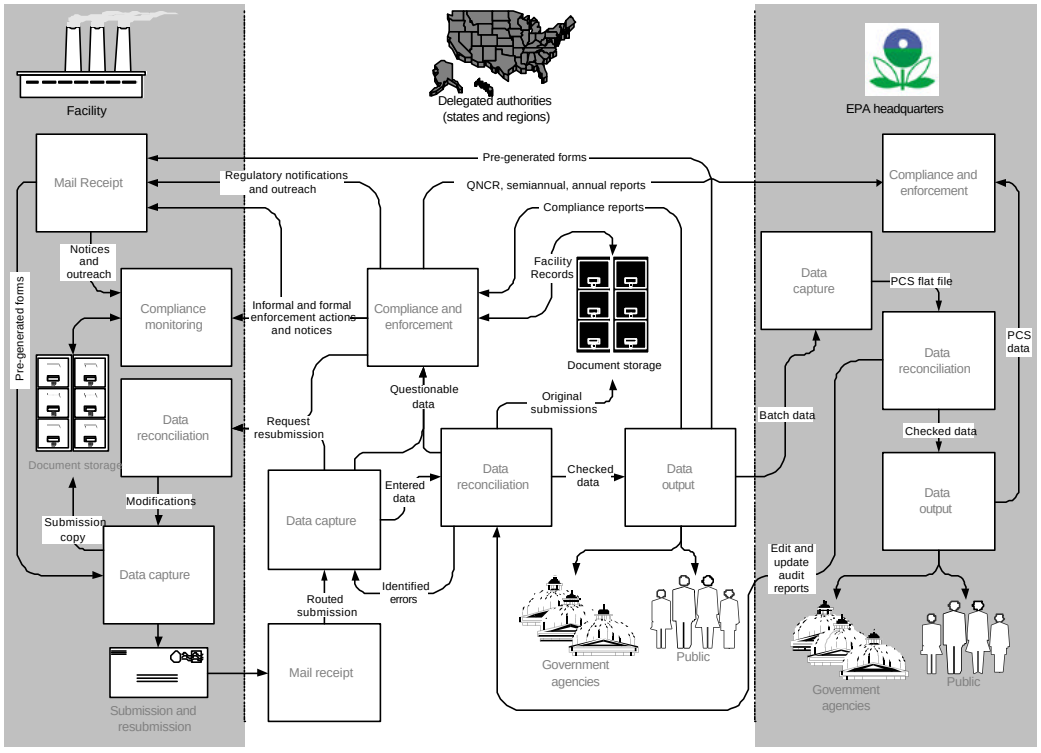
PURPOSE

The region data archiving ensures that the original, current, and historical documents are maintained in files for the required period.

DESCRIPTION

Figure IV-6-1 shows the relationship of the data archiving function to the overall process.

Figure IV-6-1. Region Document Data Archive Process in Overall Flow



Although all data are entered in databases, the copy of record is still the paper submittal, because the signature of the submitter is on the paper document. Therefore, all original submissions are maintained in files for a required period of 5 years. In addition, supplemental documents (e.g., inspection reports, enforcement actions) generally are maintained in the files with the NPDES submission.

Program areas sometimes share document archiving locations, and the archiving operation may be contracted. After the 5-year retention period, the files are sent to federal archiving facilities. All NPDES-related submission documents are stored in the format in which they are received. Mailing envelopes usually are discarded. However, Region 6 reports they keep the mailing envelope for late submittals of DMRs. The regions interviewed do not store DMR data electronically because no facilities submit electronic data.

Regardless of whether the documents are stored on or off the site, CBI, trade secrets, or financially sensitive information are stored by secured means. In general, CBI is not commonly submitted except on permit applications.

Because approaches to storing documents vary, Figure IV-6-2 shows a compilation of procedures regional authorities have established for requisitioning and submitting documents.

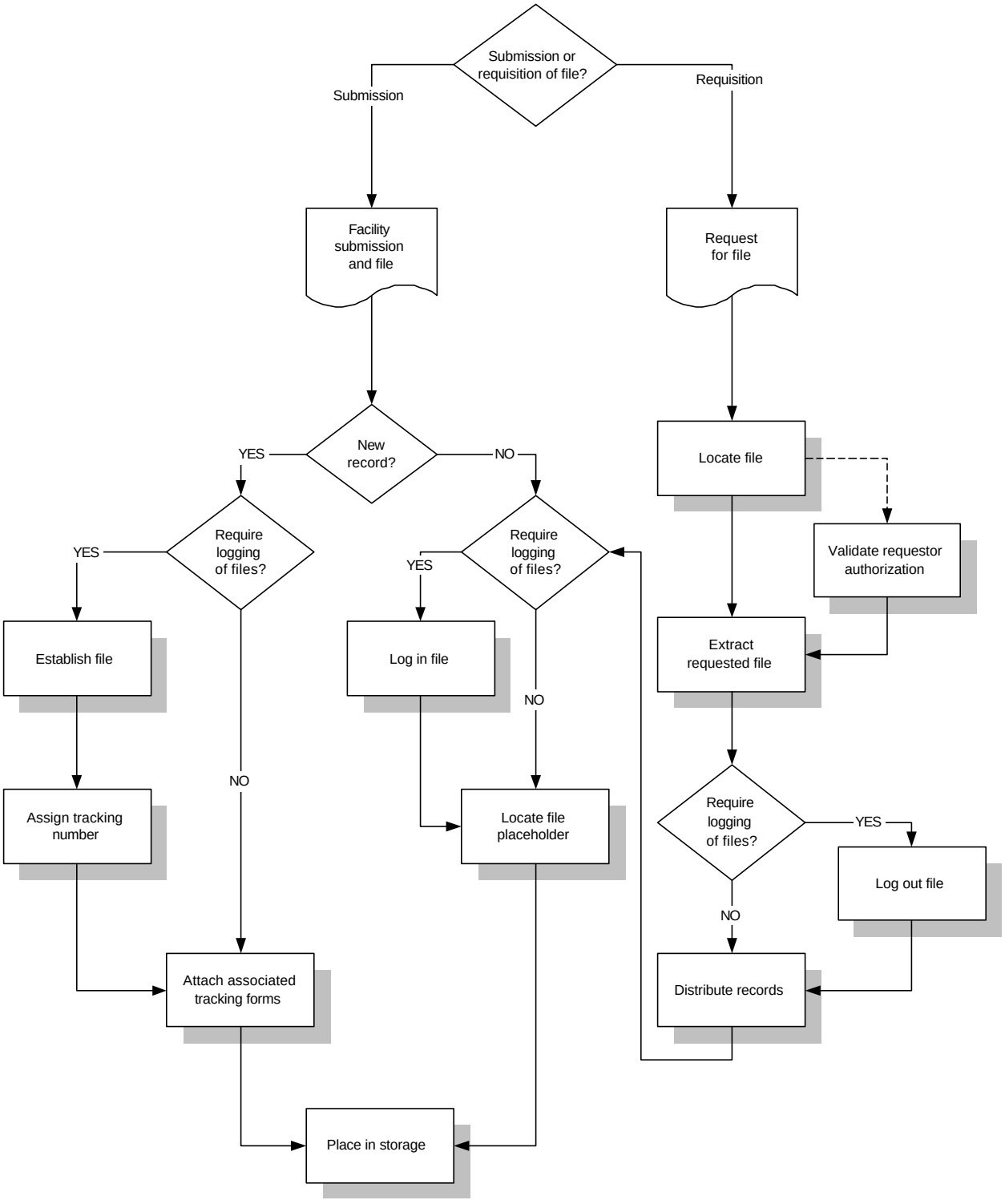
Requisition

Document storage begins when a request for a facility's file is submitted. Typically, a requestor must submit the facility's permit identification number and reporting period for the information requested.

Fulfilling a request for submittal information begins with locating the physical file and extracting the requested records. Sometimes a placeholder is used to facilitate returning the file to storage. The requestor's authorization to access the data may be validated before the requested records are removed. Some regions may require that the records be formally logged out before they are distributed. The records then are distributed. After the requestor's review is complete, the records are logged in (if required), the file placeholder is located, and the records are returned to storage.

Files and the information in them are removed for all requestors. Only the information requested is distributed. For requests from the agency, the file contents generally are not copied before the information is distributed. Although copies are made to satisfy FOIA requests, no software is used to track distributed data. The files are distributed when they are requested. Requests for submittals are not recorded.

Figure IV-6-2. Region "As Is" Data Archive Process



Submission

The method for submitting facility records for storage depends on whether a file for the facility exists. If the information is submitted for an existing facility, the corresponding file is located and the information stored in the file. Some regions require that the information be logged in. If the information being submitted is from a new facility and must be logged in, some regions establish a physical file, assign a tracking number, and attach tracking forms to the file before storing it. If the information does not have to be logged in, some regions simply attach tracking forms to the file before storing it.

Chapter 7

Region Data Distribution Function

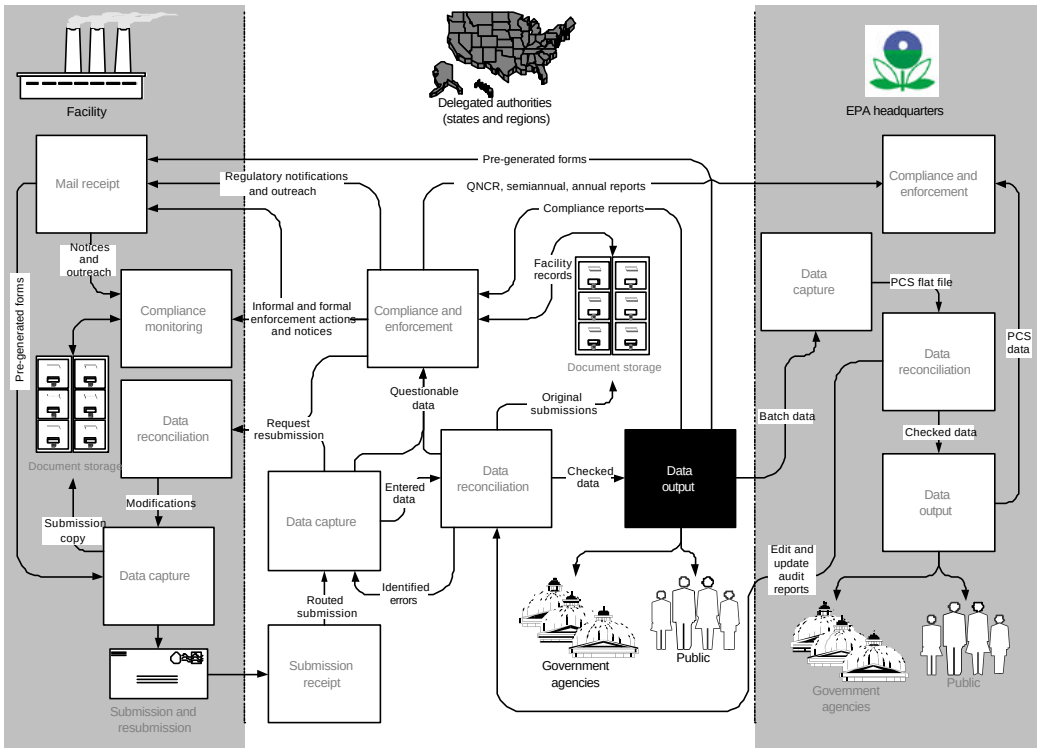
PURPOSE

The region data distribution assists with managing the NPDES program, keeping the public informed, and preparing data for uploading to PCS.

DESCRIPTION

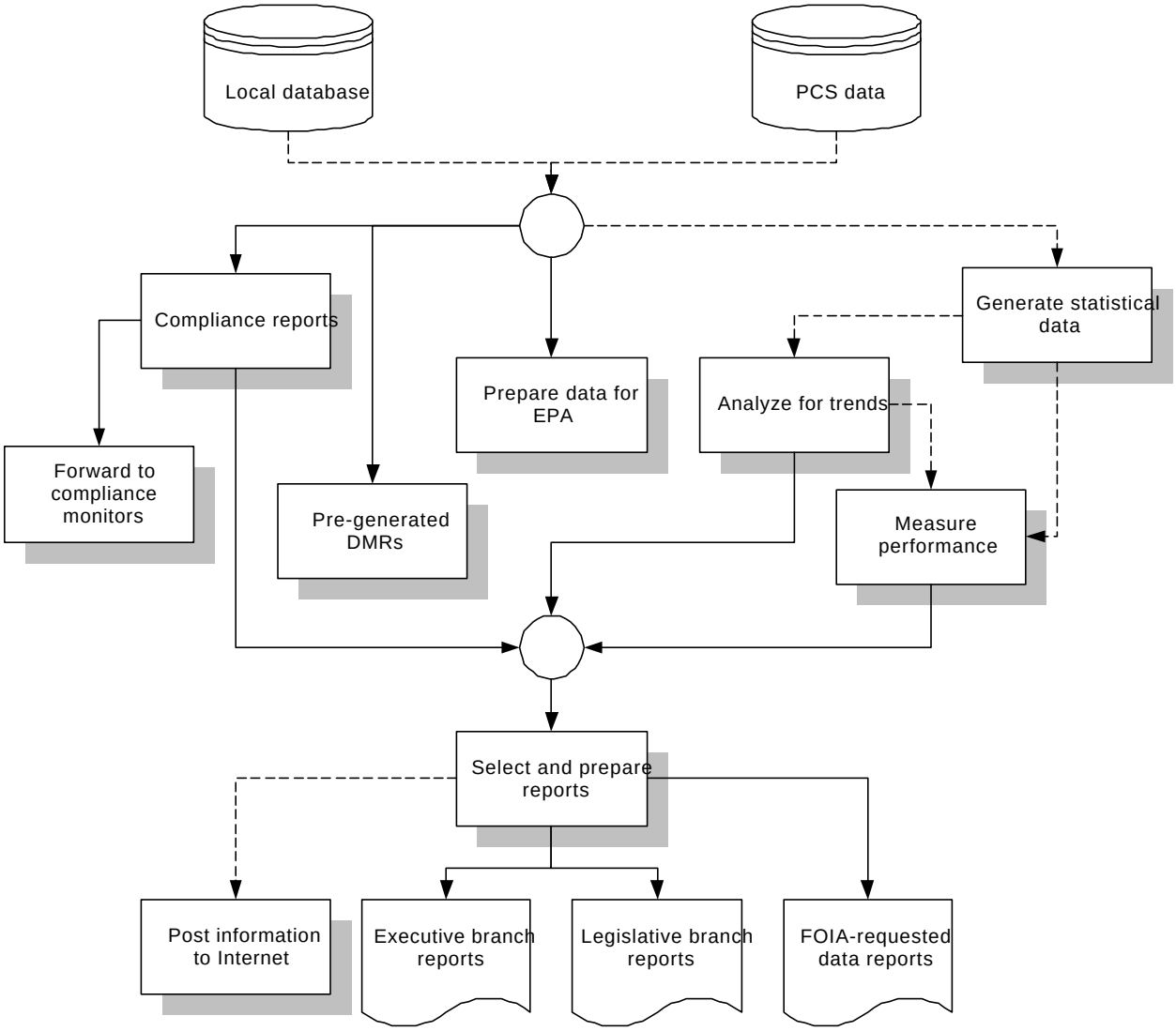
Figure IV-7-1 depicts the distribution process in the overall data process flow.

Figure IV-7-1. Region Data Distribution Function in Overall Process



As shown in Figure IV-7-2, regulating authorities rely on PCS to generate outputs.

Figure IV-7-2. Region "As Is" Data Distribution Process



Data retrieved from the PCS database is used to generate DMR forms. Facilities, with regional approval only, may develop and submit their own forms if the DMR conforms to the region's specifications. The pregenerated DMRs may be sent to the reporting facility in batches (often quarterly or annually) or once to cover the life of the NPDES permit, which is usually 5 years. Pregenerated forms also may be sent when permits are reissued or modified. The forms usually are sent by standard mail, but may be sent via certified mail for tracking. In accordance with regional procedures, the issuing agency's compliance specialist may compare the pregenerated DMRs to the permits to ensure their accuracy before they are distributed.

After regions enter their data off-line in PC-Entry, they send the batch file created from their DMR data to PCS. PCS requires that the batch data be formatted into a

positional file structure resembling an 80-column card format. PC-Entry automatically outputs a file created to match the PCS input format.

Reports (i.e., queries) generated from PCS may be used for reviewing data compliance (i.e., developing the QNCR) and evaluating the program. Some statistical reports also may be used for evaluating trends in the program or the performance of the agency. Often the evaluated data are used to prepare reports for the executive and legislative branches of the federal government or special reports for internal offices.

In general, the government databases are public information and, therefore, are available for review. Exceptions are made for the public availability of inspection schedules and pending enforcement actions. Reports may be generated in response to requests from the public, manufacturers, and businesses. Some information also may be posted to Internet sites. Data outputs from PCS are available from NTIS.

Chapter 8
Region Information System

The region information system, PCS, and its access programs are maintained by OECA. Refer to Chapter 8 of Part V.

Chapter 9

Region Compliance and Enforcement

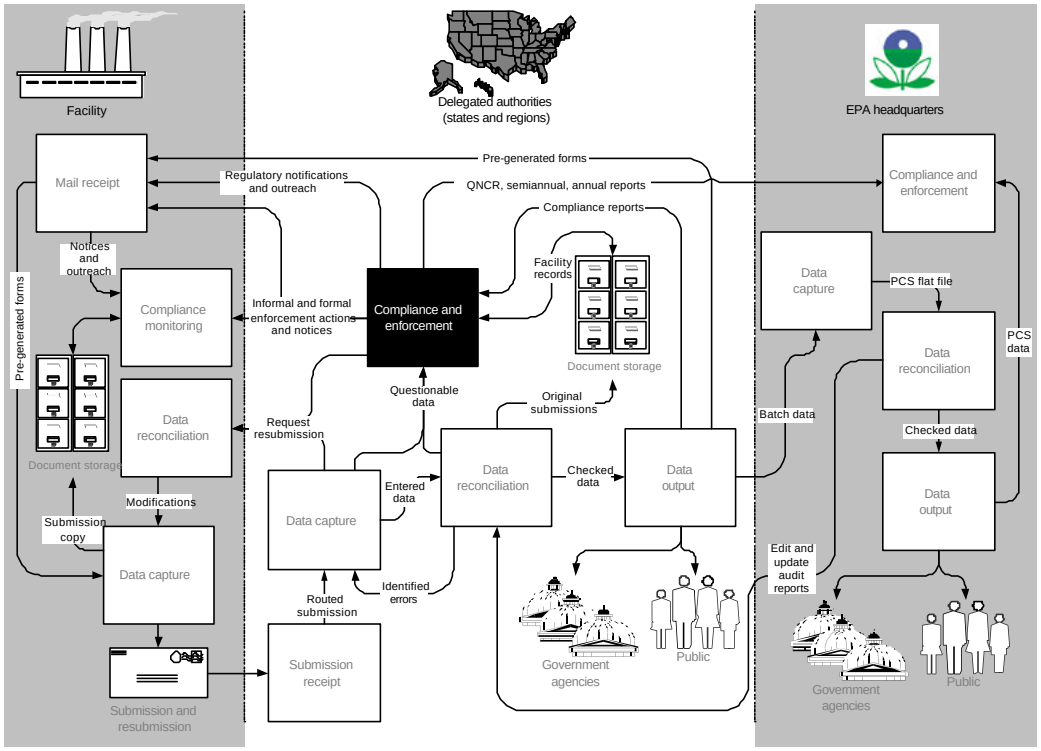
PURPOSE

Region compliance and enforcement ensures that NPDES permit requirements are met by facilities that report to the region and assists the monitoring compliance and enforcement efforts of the delegated states.

DESCRIPTION

While a DMR submission is being processed, an NPDES specialist may identify potential compliance issues and follow up on apparent deficiencies. In addition, the region assists delegated states with monitoring compliance and enforcing regulations. Figure IV-9-1 depicts compliance monitoring activities in the data process flow.

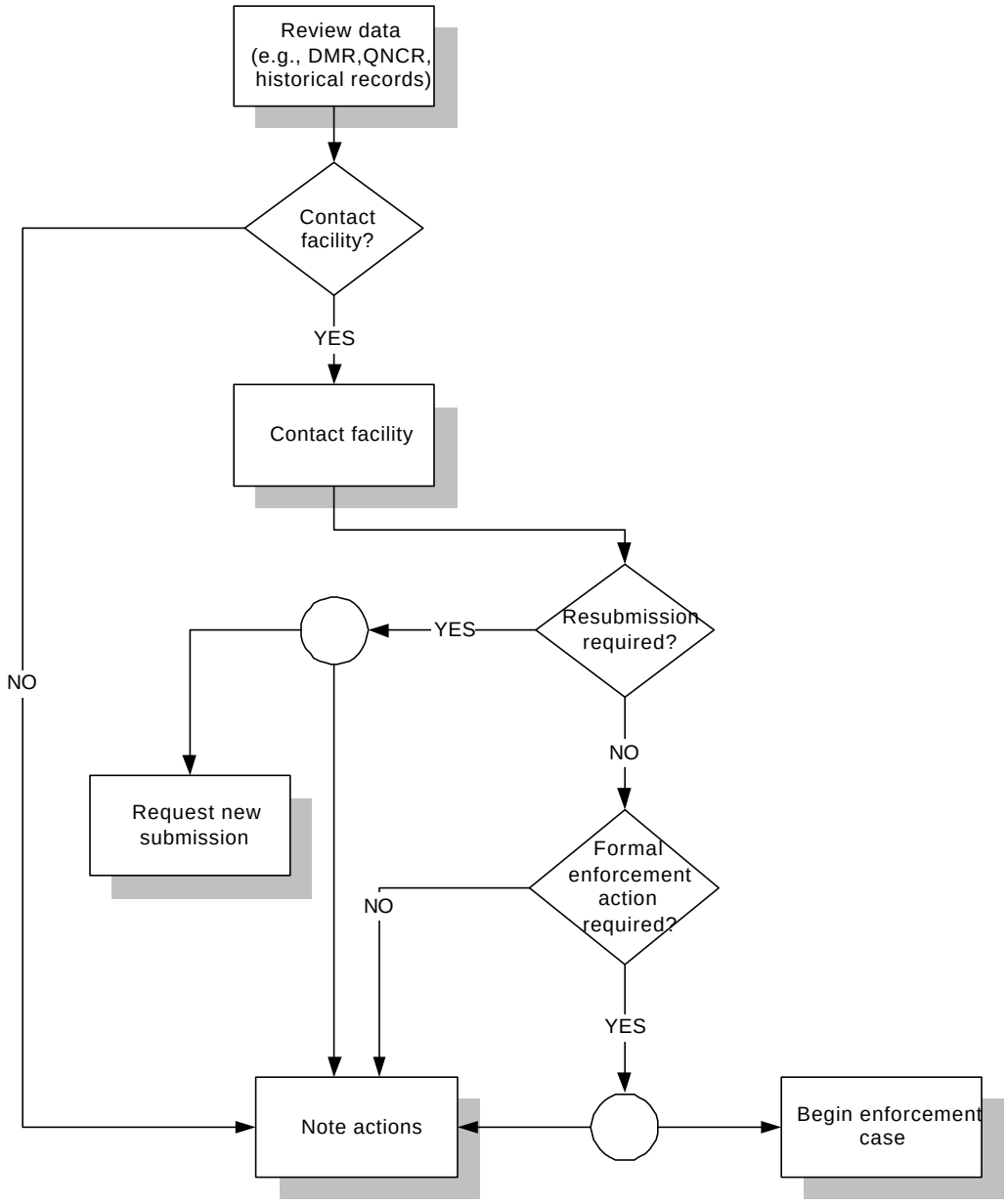
Figure IV-9-1. Region Compliance and Enforcement in Overall Process



COMPLIANCE

Specialists who monitor facility compliance use DMRs and other data reports to identify or verify potential compliance problems. Not all problems require enforcement. Regions provide guidance or leave the decisions to the specialist about how compliance monitors should determine the need for further action, including enforcement. Figure IV-9-2 illustrates a generic process that a compliance specialist may follow in reviewing submissions that contain errors or may not be compliant.

Figure IV-9-2. Region "As Is" Compliance Process



In attempting to resolve questions or determine the correct course of action, a specialist may draw on permit information and past dealings with a facility. The specialist may request the submitter correct their DMR and resubmit it. If the specialist is not permitted or is unable to determine corrective action, he or she may recommend to compliance and enforcement personnel the best course of action for resolving the problem. Many issues are handled and resolved informally, such as by a telephone call. Others require documented enforcement action.

As part of the region's oversight of states, the region assists with developing and reviewing the state's QNCR before sending it to OECA.

Sometimes a single submission is cause for action. For example in Region 6, if a facility fails to submit one entire DMR, the facility is considered significantly noncompliant. Some action will be taken, even if it is a phone call or other informal enforcement action. When reviewing a problematic submission in light of a facility's history, a specialist may recommend or initiate enforcement actions.

ENFORCEMENT

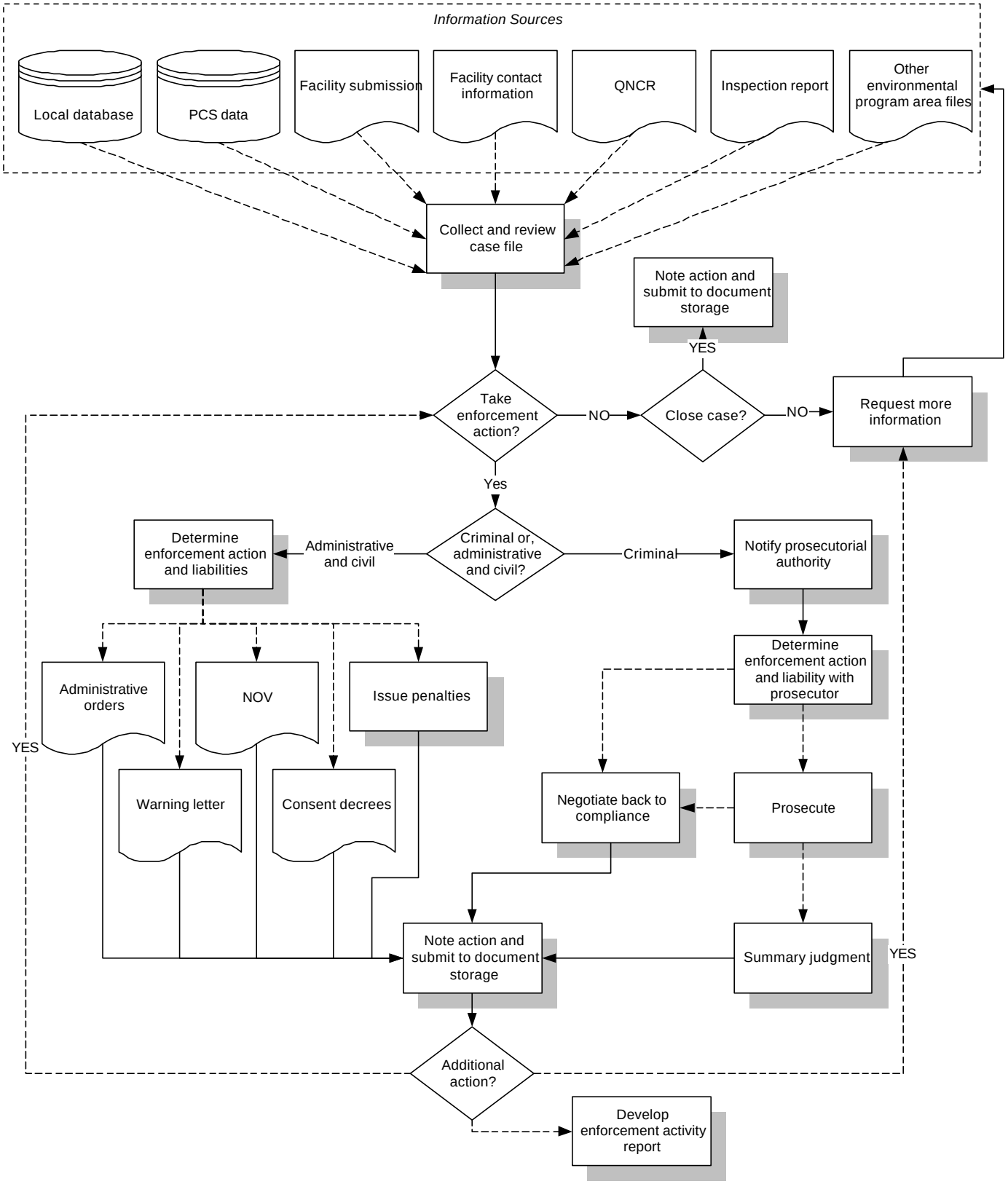
Regions have discretion in determining the appropriate action to take when a facility violates its NPDES permit. Facilities can violate their compliance submissions by failing to report, reporting incompletely or inaccurately, and exceeding NPDES permit limits. Regions handle each violation case by case and consider a facility's circumstances and reporting history.

If enforcement is necessary, a case history will be developed that shows the facility's inability or unwillingness to improve its compliance record. To evaluate violators' progress in improving their compliance record, regions rely on data provided in facilities' submissions, inspections, conversations with facility representatives, and information from other environmental programs.

Figure IV-9-3 presents a generic flow for the progression of enforcement decisions and actions by a region.

Periodically, the delegated authority reviews the files of violators and determines if the region has enough information to permit closing the case or if the region must expand enforcement. If the information is not sufficient, the case file remains open until enough information is gathered to a determination. If further enforcement is unnecessary, the file most likely will be closed. If enforcement is required, the region needs to select civil or criminal actions.

Figure IV-9-3. Region "As Is" Enforcement Process



Typical regional enforcement actions include the following:

- Warning letters to inform a facility that enforcement may be escalated
- Administrative orders that issue steps the facility must take
- NOV that explains violations and requirements for returning to compliance
- Consent decrees that are legal rulings for returning to compliance
- Issue penalties.

Criminal actions are typically the responsibility of the region's attorney. The region's attorney works with the regional environmental office to identify laws a facility may be violating and files charges.

To get a picture of enforcement actions on a regional level, LMI researched the Web site of Region 6 and found the following information.

For the fourth quarter of FY99, 125 enforcement actions were initiated by Region 6 in Texas. Of these, 84 (or 67 percent) were listed as Clean Water Act 301 or 311 actions. These actions were taken because the facilities cited failed to have a NPDES permit, failed to submit DMRs and noncompliance reports, violated effluent limits, or deficiencies were found during inspection. The types of actions were classified as Administrative Penalty Orders or Administrative Orders. By extrapolating the number of actions taken in Texas, we determined that for all regions and states, a total of 6,250 (i.e., 125 actions × 50 states) enforcement actions were initiated in FY99.

Also, for the fourth quarter of FY99, 89 enforcement actions were closed or concluded by Region 6 in Texas. Of these, 50 (or 56 percent) were listed as Clean Water Act 301, 311, and 402 actions. These actions were similar to those cited above. The types of actions were classified as Administrative Orders, Consent Agreement and Order, and one civil judicial case with the Department of Justice. By extrapolating the number of actions taken in Texas, we determined that for all regions and states, a total of 4,450 (i.e., 89 actions × 50 states) enforcement actions were closed or concluded in FY99.

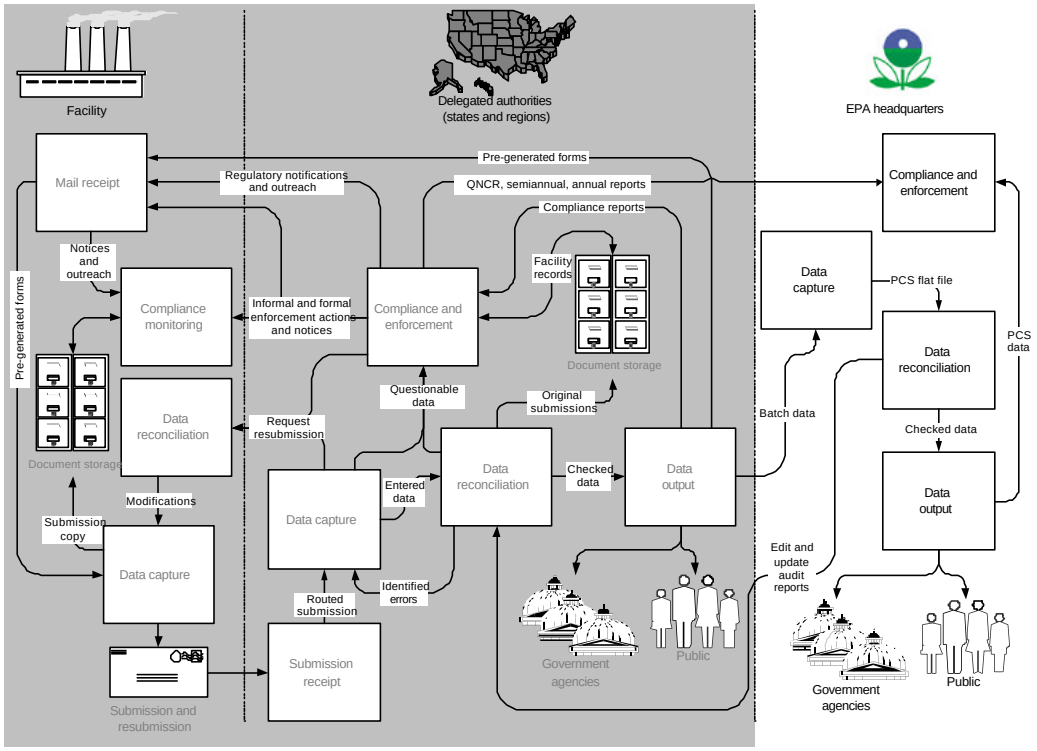
Part V
Federal

Part V explains the “as is” process for the federal NPDES program on a national basis. The chapters in this part describe the general reporting process, including reporting scenarios, mechanisms, and processing functions.

Chapter 1
Federal Process Overview

The NPDES activities at the federal level primarily focus on capturing and monitoring data in PCS from the delegated states and regions. Figure V-1-1 shows the federal functions.

Figure V-1-1. Federal Data Process Flow



Most federal NPDES resources are used for overseeing PCS. OECA, as the owner of PCS, maintains the input process in coordination with the states and regions. Data are transmitted to PCS from states and regions in a format defined by EPA. PCS preprocesses the data to determine if the data are properly formatted and have all the requisite data to match the reporting requirements of the permit that were entered into PCS when the permit was issued. Reports are issued to the states and regions detailing the results of the "dummy" and "live" edits. Once the errors have been corrected, the data are loaded into PCS. The data in PCS assists the EPA in providing information to Congress and the public.

One of OECA's main jobs is to review the QNCR to identify facilities that state, regional, and federal authorities should focus on bringing into compliance.

A QNCR can be generated from the data in PCS, but each state and region develops a QNCR of their facilities to submit for EPA's review.

Because EPA headquarters receives data only in electronic format, the functions discussed in Chapter 3, Mail Receipt, and Chapter 6, Data Archive, are not applicable for this part.

Chapter 2
Federal Program Management

PURPOSE

The federal program management oversees federal policy, data processing, and administrative activities for the NPDES program. Federal program management includes managing the collection of NPDES data in PCS, monitoring state and regional compliance and enforcement, and gauging the effectiveness and status of the NPDES program on the regulated community, environment, and public.

DESCRIPTION

Program management involves collecting inputs (e.g., financial reporting, compliance, and enforcement data), analyzing statistics and evaluating trends, and measuring performance to produce outputs. Outputs can include new program policy and regulatory requirements, guidance to the regulated community, FOIA reports for public or private consumption, and internal and external reports for government agencies or entities. Staff members of OECA and the Office of Water manage the NPDES program at the federal level.

Office of Enforcement and Compliance Assurance

OECA oversees the federal compliance and enforcement of the NPDES program. OECA uses the PCS database as the main tool for this task. Through PCS, OECA monitors compliance and enforcement activities of states and regions, identifies trends, and measures performance.

OECA has ownership of PCS and oversees modifications to the structure and flat-file processing routine. To facilitate the exchange of data from state information systems and PCS, the EPA has an interface program that reads positional flat files into PCS. OECA communicates changes to PCS regularly to the states and regions.

To complement the management of PCS, OECA hosts a PCS users group meeting once a year to discuss potential changes and uses for PCS. State and regional PCS program managers and other interested EPA parties attend the meeting.

Office of Water

The Office of Water develops the NPDES policies that form the minimal operational requirements for regions and delegated states to follow. The Office of

Water is working with OECA to develop a new rule that would modify 40 CFR 122.22 that governs the collection of DMRs. The rule would give facilities the option of modifying their NPDES permits to submit DMR data electronically.

Chapter 3
Federal Mail Receipt Function

Unauthorized data modifications in PCS are not likely to occur. Although data may be entered incorrectly by the state or region, modifications are limited to the authorized personnel and require password-protected user access.

Trade or other CBI are rarely issues at the federal level. Trade, financial, or other CBI usually relate to permit applications to states and regions and are not included in the data sent to PCS. This information may be acquired as part of an investigation and would be protected from unauthorized parties.

Authentication of DMR certifiers is important to the federal enforcement staff when dealing with facilities that are significant violators. The ability to verify the signer of a DMR assures that culpability in cases of potential fraud is properly assigned.

Chapter 4
Federal Data Capture Function

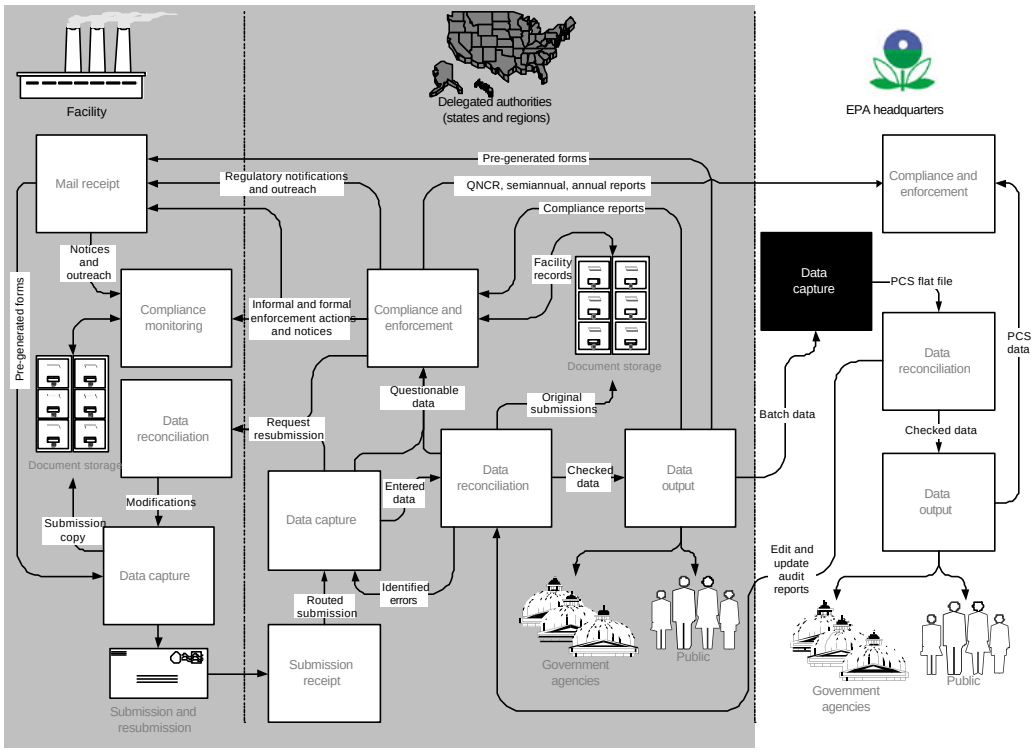
PURPOSE

The federal data capture function collects data as sent to PCS by the regulating authority, whether from a delegated state or EPA region.

DESCRIPTION

EPA headquarters does not collect NPDES submissions from facilities. The regions and states forward data they capture in their NPDES tracking systems to PCS. Figure V-4-1 shows this step of providing state and regional data to PCS.

Figure V-4-1. Federal Data Capture Function in Overall Flow



DMRs and state and region compliance data are entered into PCS by one of three methods: on-line data entry with PCS-ADE, microcomputer entry and upload with PC-Entry, or batch data entry from state information systems. PCS-ADE data entry is an interactive method of PCS input enabling users to enter data directly into the EPA mainframe using terminal emulation. PC-Entry is a DMR data capture program available

from EPA that writes the entered data to a local file for upload to PCS in batches. States with independent information systems for capturing data convert the data to a batch file similar to the one from PC-Entry that can be sent to PCS. Regardless of the method for entering and editing PCS transactions, data initially are stored in temporary "hold" files.

We estimate that around 650,000 DMRs are entered into PCS each year. Most transfers are uploads of batch files. The batch files contain all the EPA-required data that the states or regions entered into their information system for all facilities since the last upload. Data that are sent in batches typically are transmitted as a "dummy" edit first. A dummy edit is intended to generate an audit report from PCS that can be reviewed by the sender to verify submitted data. When the states and regions are ready to record their data at the federal level through a batch transaction, they transmit their data as part of a "live" edit. The live edit also produces an audit report and records the data in a holding file. Twice a week, PCS loads the data from the holding files into the PCS records.

On-line entries made through PCS-ADE are recorded in a hold file on the PCS mainframe. As part of the process for uploading data submitted in batches, PCS adds the data entered on line into a batch file that is loaded into the PCS records.

All transmitted data are made though direct connection accounts that are password protected and only permit modifications to facility data if the state or region has primacy. The exchanged file format is based on an 80-column card reader format. OECA maintains the data elements and code lists for PCS.

Chapter 5

Federal Data Reconciliation Function

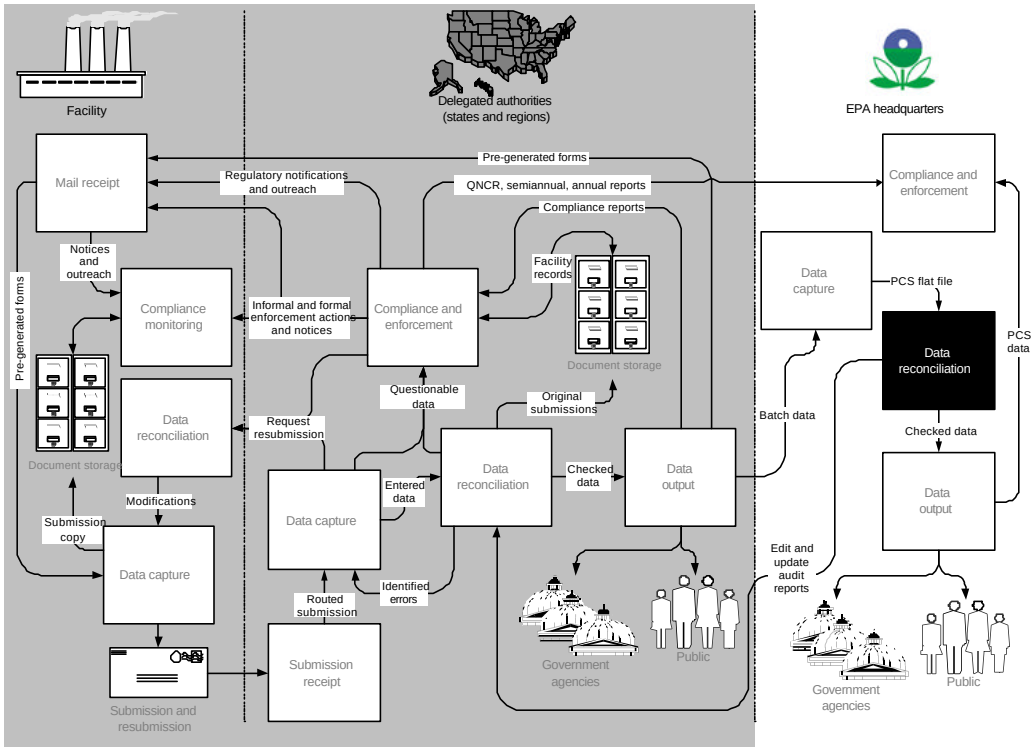
PURPOSE

The federal data reconciliation function verifies the data in PCS.

DESCRIPTION

The states and regions verify and reconcile data in PCS. To assist them, PCS automatically checks on transmitted data. Figure V-5-1 shows this step of providing state and regional data to PCS.

Figure V-5-1. Federal Data Reconciliation Function in Overall Flow



PCS checks the syntax to verify that it can read the data during the biweekly update routine. The syntax is checked after each submission is entered with PCS-ADE and on the batch transactions as they are received. States and regions are notified of the success or failure of transactions through an electronic report, the Edit Audit Report (see Appendix C), which they receive after every batch upload. A file marked by the state or region as a "dummy" edit will cease further

processing by PCS after the Edit Audit Report is transferred back. The states and regions typically print out this report and go over it to identify necessary corrections.

If the state is satisfied that their data is ready to be recorded in PCS, the file is marked as a "live" edit. A live edit continues to process the file after an Edit Audit Report is generated. An update job is executed to edit the data and enters the accepted transactions into the PCS database. When the update is complete, states and regions receive another electronic report, Update Audit Report, that describes the actions taken by the update job in processing their data. For each transaction, the status report is a final verification that newly entered data have been incorporated successfully into the PCS database and identifies previously undetected errors that need to be corrected. The state and regions send the corrected DMR data to PCS by sending a replacement transaction that overwrites existing data. A replacement transaction that contains DMR corrections is sent in the same way as the original.

Chapter 6
Federal Data Archive Function

This chapter is not applicable for this part.

Chapter 7

Federal Data Distribution Function

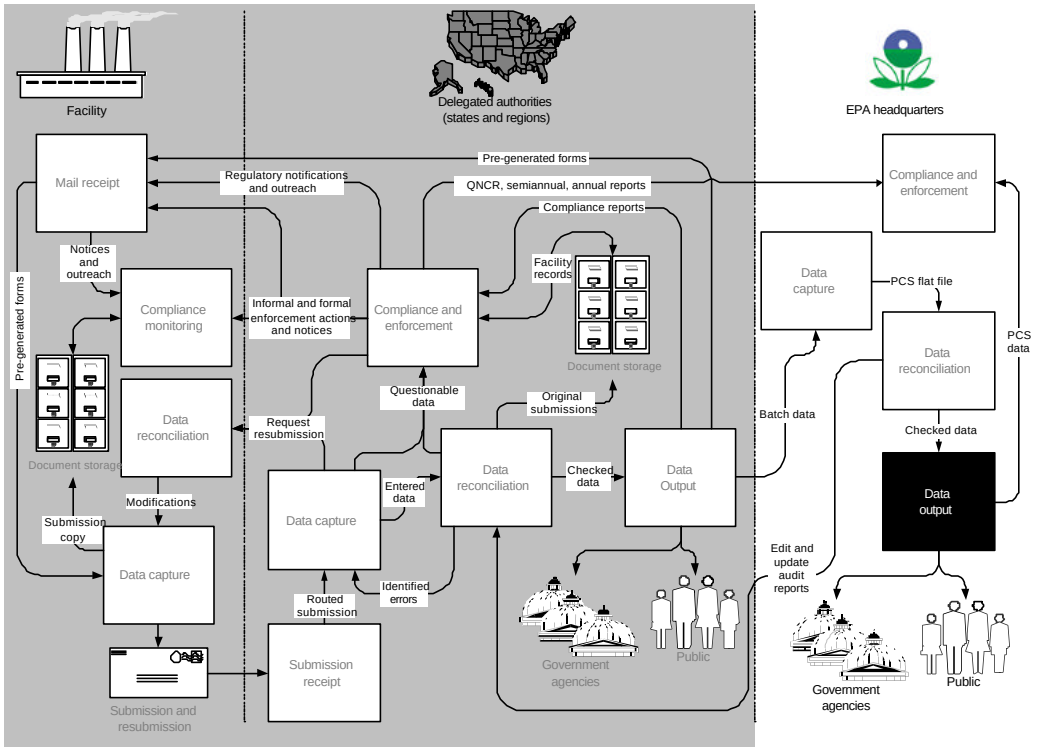
PURPOSE

The federal data distribution function provides information about the status of NPDES compliance to EPA headquarters and regional program offices, state programs, government officials, and the public.

DESCRIPTION

The edited data in PCS may be used to create statistical reports for evaluating trends and measuring the performance of the agency and the NPDES program. Often the evaluated data are used for reports for the executive branch and Congress. Figure V-7-1 depicts the flow of information from the EPA to these entities.

Figure V-7-1. Federal Data Distribution Function in Overall Flow



Most information in PCS is downloaded to the EnviroFacts database, which the public can search to view facility compliance data on the Internet.[1] The public also can request facility information from PCS through the FOIA, except for information about pending enforcement cases and inspection schedules. Requests also can be sent to NTIS for hard copies or diskettes (American Standard Code for Information Interchange format) of the following PCS data outputs:

- NPDES facility mailing addresses and labels
- Information about the general facility and permits
- SNC (significant noncompliance) list for the most recent quarter
- Information about enforcement action for the most recent two years
- Information about schedules for facilities to meet compliance requirements for permits or in response to enforcement action for the last two years
- Facility inspection information covering the preceding two years.

[1] Environmental Protection Agency, EnviroFacts Web site, 1999; accessible at http://www.epa.gov/enviro/index_java.html.

Chapter 8
Federal Information System

The federal information system, PCS, generates regular and ad hoc reports for identifying policy, program, compliance, and enforcement issues of the NPDES program. PCS is an OECA-operated database created in 1974 and is shared with EPA's Office of Water. PCS resides on an IBM ES 9000 mainframe maintained at the NCC. PCS holds data about point-source discharges for more than 75,000 facilities.[1]

PCS has the following functions:

- Maintaining an inventory of NPDES permittees
- Providing data for Congress, states, and the public
- Promoting sound planning, evaluation, and decision-making
- Supporting effective NPDES program implementation.

The PCS database compiles permit data about NPDES-permitted facilities and their outfall levels as well as reported DMRs and compliance data. The EPA uses the data in PCS to support a broad national picture of the program when reporting to Congress and evaluating program directions. When looking closer, the data in PCS must be evaluated with caution because data quality varies depending on the resources applied by the states and regions for validating the data. Besides identifying data entry errors, compliance activities by states and regions may not be immediately reflected in PCS.

The regions enter the submissions they receive from facilities into the PCS, which may be used by states to implement and review their NPDES programs when they receive delegation. States and regions have some flexibility in inputting data to PCS. Data that are not mandatory, such as reporting discharges from minor facilities, are sometimes not entered, and all fields can be overridden when entering data. The process for entering state data and federal data into PCS is the same. Similarly, data are not labeled state or federal.

The EPA offers two training courses for state and regional users of PCS. One introduces users to the functions of PCS. The other course describes PCS's Reportable Noncompliance module and explains how to use the data in compiling the QNCRs and SNC reports.

[1] Environmental Protection Agency, EnviroFacts Web site, 1999; accessible at http://www.epa.gov/enviro/index_java.html.

PCS continues to require maintenance. OECA adds data elements and codes to PCS as needed. Meetings of the PCS users are used to keep states and regions informed of modifications and new uses of PCS data. In addition, the EPA is developing the General Enforcement Management System that may replace PCS as the NPDES compliance database. The system is scheduled to be available in 2002.

Chapter 9

Federal Compliance and Enforcement

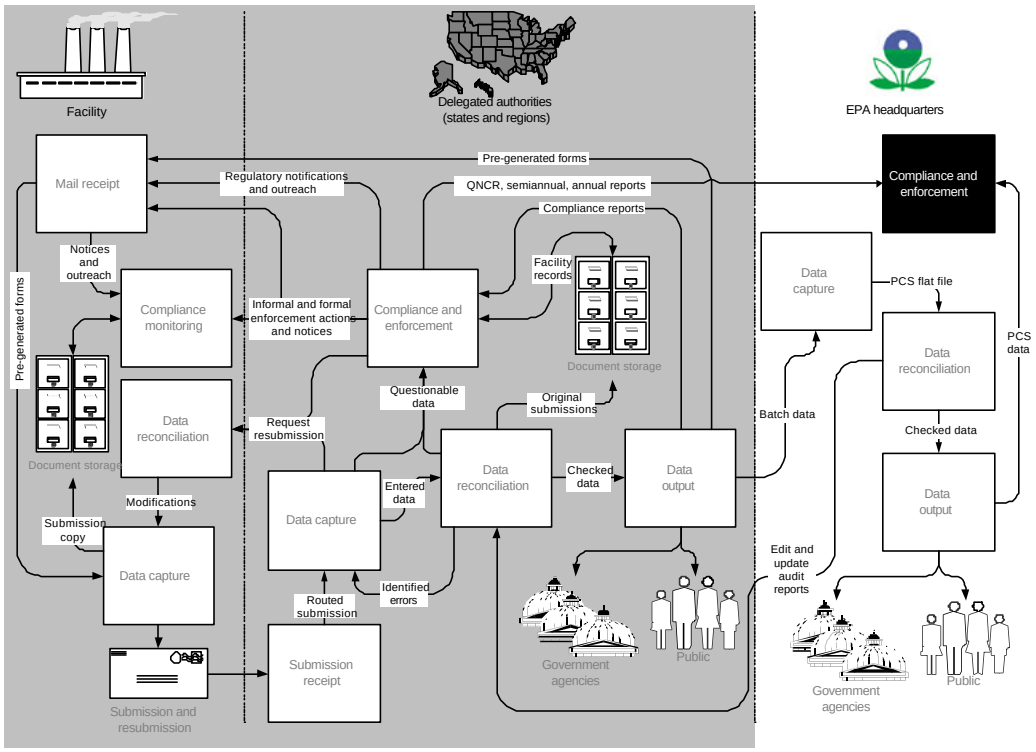
PURPOSE

The federal compliance and enforcement monitors, and assists the states and regions with enforcing compliance by facilities identified as SNC.

DESCRIPTION

OECA oversees the NPDES program and may assist delegated states and regions with compliance and enforcement monitoring and actions. Figure V-9-1 shows the flow of data for EPA headquarters' compliance-monitoring efforts.

Figure V-9-1. Federal Compliance and Enforcement in Overall Flow



COMPLIANCE

For the NPDES program, OECA coordinates and assists with the program implementation and review. OECA reviews the enforcement activities of the states and

regions by evaluating the submitted QNCRs, SNC list, and data in PCS. OECA identifies continually noncompliant facilities and tracks the states' and regions' actions. However, the data used may not reflect the most current updates from the state or region, which makes using the data as a targeting tool difficult, as has been noted in audits.[1]

ENFORCEMENT

The following information is derived from EPA document 200-R-99-003, *Enforcement and Compliance Assurance FY98 Accomplishments Report*, June 1999. For environmental media, EPA's traditional databases, such as PCS, provide rough compliance rates. In FY98, 27 percent of facilities classified as major NPDES sources were significantly noncompliant with their water permits in at least one quarter. An additional 27 percent were in a less severe category of reportable noncompliance.

EPA regional inspections of NPDES major and minor facilities for FY96, FY97, and FY98 were 1,545, 1,792, and 2,135, respectively. Inspections of minor facilities were half those of major facilities in FY96 and gradually increased so that in FY98 they outnumbered inspections of major facilities.

The number of EPA Administrative Orders issued under the Clean Water Act (CWA) from FY96 through FY98 was 504, 815, and 849, respectively. The compliance orders include those that are NPDES related; however, the EPA document gave no breakdown.

The number of EPA Administrative Penalty Order issued under the CWA from FY96 through FY98 was 153, 329, and 389, respectively. The CWA penalty orders include those that are NPDES related; however, the EPA document gave no breakdown.

The number of EPA Administrative Penalty settlements issued under the CWA from FY96 through FY98 was 169, 205, and 324, respectively. The CWA penalty settlements include those that are NPDES related; however, the EPA document gave no breakdown.

The number of new EPA civil referrals to the Department of Justice issued under the CWA from FY96 through FY98 was 48, 98, and 81, respectively. The CWA civil referrals include those that are NPDES related; however, the EPA document gave no breakdown.

The number of EPA civil judicial settlements issued under the CWA from FY96 through FY98 was 60, 35, 33, respectively. The CWA civil judicial settlements

[1] Office of the Inspector General, Region 10's National Pollutant Discharge Elimination System Permit Program, March 13, 1998.

include those that are NPDES related, however; the EPA document gave no breakdown.

States may request referrals of cases to the federal level. The cases may be taken by regions or headquarters and may involve the Department of Justice. In some cases, OECA may act on its own against a facility in a delegated state, depending on whether the state is able to act on the facility and bring it into compliance.

Information about the number of state environmental agencies' administrative actions and judicial referrals also was contained in the OECA FY98 report. As reported in the document, from FY96 through FY98, the number of state environmental agencies' administrative action referrals related to combined Safe Drinking Water Act and CWA was 4,598, 7,051, and 6,960, respectively. Judicial referrals for the same period and statutes were 169, 151, and 146, respectively. No further breakdown was provided with respect to NPDES-specific administrative action or judicial referrals.

Part VI
Summary

INTRODUCTION

EPA has targeted 13 national reporting systems for reengineering as part of the Reinventing Environmental Information (REI) initiative. Each of the reporting systems has a separate and unique database that receives and processes information from different sources in various formats (electronic, paper, diskette). To ensure that reporting transactions are consistently managed, EPA is developing a central receiving (CR) facility. The CR facility will be a convenient, and cost-effective one-stop approach for regions, states, and the regulated community to fulfill their compliance reporting requirements for all EPA program areas.

To design a viable and flexible "to be" CR facility, EPA is identifying and documenting the current requirements of four types of compliance reporting systems according to their level of delegation:

- *Nondelegation.* The Toxic Release Inventory System
- *Mixed delegation*. The National Pollutant Discharge Elimination System
- *Full delegation*. The Aerometric Information Retrieval System and National Emission Trends reporting system
- *Nearly full delegation, complex.* The Public Water System Supervision program.

The "as is" functions for the NPDES program presented in this report are helpful for identifying CR requirements. The CR requirements will be used to develop an architecture for processing documents to support NPDES and other EPA programs with similar levels of delegation and compliance reporting requirements.

"AS IS" STAKEHOLDER ROLES AND FUNCTIONS

Each level of reporting the results of discharge monitoring for NPDES requires a number of steps to record and maintain the monitoring data. Regulated facilities monitor the levels and types of pollutants discharged. Data are recorded on the DMR form and sent to the delegated authority, where the form is date stamped when received. The delegated authority enters the data into their compliance database. The delegated authority extracts data required by the federal government, which is uploaded to PCS. Delegated authorities and OECA reconcile data in their

systems and generate reports for compliance and enforcement staff. Data also are output for government agencies and the public.

A summary of the "as is" functions for each of the stakeholder groups is shown in Table VI-1.

Table VI-1. Summary of "As Is" Stakeholder Functions

Function	Stakeholders			
	Facility	State	Region	Federal
Program management	• DMR reporting	• Processing • Coordination	• Processing • Program oversight	• Maintain PCS
Mail receipt	• Pregenerated forms. • Notifications	• DMR	• DMR	N/A
Data capture	• Collect data	• DMR	• DMR	• State and regional DMR data
Data reconciliation	• Reconcile errors	• Review DMR data	• Review DMR data	• Reconcile data errors
Data archive	• DMR, related documents	• DMR, related documents	• DMR, related documents	N/A
Data distribution	• Submit certified DMR	• State DMR data	• Regional DMR data	• National DMR data
Information system	• Variable systems	• Variable systems	• PCS	• PCS
Compliance and enforcement	• Provide additional DMR information • Address inspection findings and enforcement actions	• Compliance review, assistance, and enforcement	• Compliance review, assistance, and enforcement	• Compliance review, assistance, and enforcement

Note: N/A = not applicable.

Facility Functions

The regulated facilities may do the monitoring themselves or contract with a firm to collect and analyze their discharges. The chemical analysis data are entered on pregenerated DMR forms that the regulated facility received from the delegated authority. A facility representative certifies the completed DMR and mails it to the delegated state or EPA region. The facility maintains a copy of all submissions and assists with inspections or inquiries made by the delegated authority.

State Functions

The state date stamps the DMR when they receive it. The state also may give the DMR a tracking number. Staff key the DMR data into the state's information system. Keyed data are checked for errors. Compliance staff resolve data problems that are not caused by data entry. Paper submissions are kept in on-site files, but may be archived off the site after the record retention requirements have passed. States extract data that EPA requires and create an electronic file in the format required for inputting to PCS. All the data also are available for other states to evaluate and use to help determine future policy. The public also may request copies of facility submissions and state compliance databases or access the information from government Web sites.

Region Functions

The region is the delegated authority for tribal lands and when authority has not been delegated to states. Regions process DMRs similarly to the delegated states. The submission is date stamped and forwarded to staff for data entry. Data are entered either directly into PCS or to PC-Entry files that can be uploaded to PCS. Regional staff monitor submissions to identify possible noncompliant activities and clarify discrepancies. Regions make their data available to other government agencies and to the public when they receive FOIA requests.

Regions support the delegated states through oversight and training. The regions oversee compliance by reviewing state data reported into PCS and auditing state files.

Federal Functions

Data typically are sent to PCS first as a "dummy" edit that preprocesses the data. EPA send the submitter an Edit Audit Report showing errors. Once the submitter corrects the errors, it sends the corrected the data as a "live" edit recorded into PCS. An Update Audit Report is sent back.

The data in PCS assist the EPA in evaluating the NPDES program's effectiveness at managing discharges and informing Congress and the public.

"TO BE" SYSTEM CONSIDERATIONS

A "to be" system should target broad EPA and NPDES requirements. General goals for a "to be" system include the following:

- Fulfill the Government Paperwork Reduction Act and REI requirements to reduce the burden of paper submissions on the regulated community

- Reduce the number of times a single submission is keyed into information systems, and thus reduce data entry errors
- Reduce cycle time for reporting and correcting information
- Promote architectures that may apply to a range of environmental reporting program areas.

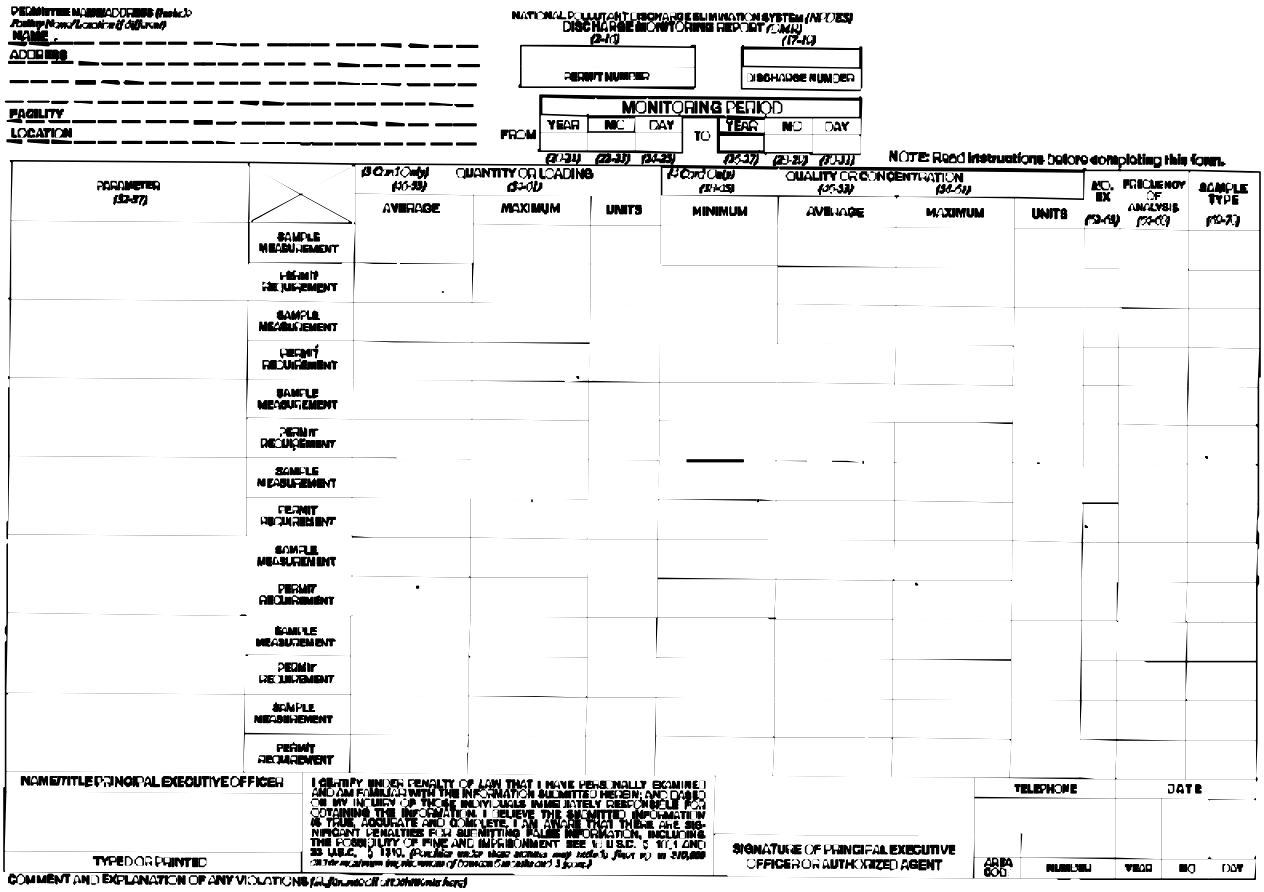
Resolutions to some of the issues that affect NPDES may be beneficial to other reporting programs. One such issue is the great variety of technical expertise needed to support electronic reporting among NPDES-regulated facilities. Some facilities may have few resources for programming a data transaction. These facilities need an electronic form that is easily made, such as through a Web connection, that includes online guidance and data validation. Many large organizations have internal information and communication systems that record data relevant for DMRs. These large facilities may want to generate a standard output file that they can submit to their authority.

Work is under way at various levels to support electronic submissions of DMR data. For example, some delegated states are preparing software that generates flat files that can be returned on disks or through e-mail. The "to be" system must recognize the different systems being used and the increase in data that states may require.

EPA's initiative for an interim data exchange format is EPA's attempt to move away from submitting data via the positional flat-file format. Concurrently, EPA is developing a replacement for PCS. The transmission format must not be tied to either the current or future information system; otherwise facilities, states, and regions will have to reprogram their systems when EPA switches from PCS.

EPA also is concerned about the assurance of data reliability. The submitters and the regulatory authorities must have a high level of confidence that the electronic architecture can ensure that the data in their systems is valid.

Appendix A
EPA-Suggested DMR Form



Appendix B
Wisconsin DMR Form

Wastewater Discharge Monitoring Long Report

Facility Name:
Facility Address:

Facility Contact:
Phone Number:
Reporting Period: 05/01/1999 - 05/31/1999
Form Due Date: 06/15/1999
Permit Number:

For DNR Use Only

Date Received:	[illegible]
DOC:	16035
FIN:	5946
FID:	431004750
Region:	Northeast
Permit Drafter:	Linda Vogen
Reviewer:	Gary Kincaid
Office:	Green Bay

	Sample Point	701	701	701	701	701	702
	Description	INFLUENT	INFLUENT	INFLUENT	INFLUENT	INFLUENT	PACKERLAND WHEY
	Parameter	211	66	457	388	789	211
	Description	Flow Rate	BOD5 Day Total	Solids Suspended Total	Phosphorus Total As P	Nitrogen Ammonia (NH3-N) Total	Flow Rate
	Units	MGD	MG/L	MG/L	MG/L	MG/L	MGD
	Sample Type	Continuous	24 hour composite	24 hour composite	24 hour composite	24 hour composite	Continuous
	Frequency	Daily	3/week	3/week	3/week	3/week	Daily
	Footnotes						
Sample Results	Day 1	0.2743					0.0220
	2	0.2370	330	192	7.9	18.5	0.0480
	3	0.2360	210	196	7.4	18.5	0.0380
	4	0.2016	314	140	5.4	22.5	0.0150
	5	0.2608					0.0650
	6	0.4861					0.0560
	7	0.4435					0.0730
	8	0.4223					0.0470
	9	0.3436	238	116	5.0	9.3	0.0580
	10	0.3345	200	116	6.0	11.4	0.0560
	11	0.2096	231	102	4.2	13.8	0.0160
	12	0.4786					0.1400
	13	0.3981					0.1000
	14	0.4006					0.1260
	15	0.3835					0.1290
	16	0.3309	320	192	5.2	12.4	0.0780
	17	0.3891	212	108	4.0	11.2	0.1200
	18	0.3891	214	140	4.8	23.5	0.1580
	19	0.3940					0.1580
	20	0.3875					0.1470
	21	0.4108					0.1410
	22	0.4191					0.1524
	23	0.3802	288	200	5.7	11.4	0.0796
	24	0.3409	194	136	4.4	12.4	0.0780
	25	0.4272	222	140	4.5	13.4	0.1600
	26	0.3670					0.0900
	27	0.3949					0.1500
	28	0.3969					0.1640
	29	0.3758					0.1000
	30	0.3014	212	200	4.4	12.4	0.0680
	31	0.3282	140	132	4.5	11.5	0.1020
	Total	11.1928	3375	2126	73.2	203.5	2.8420

	Sample Point	701	701	701	701	701	702
	Description	INFLUENT	INFLUENT	INFLUENT	INFLUENT	INFLUENT	PACKERLAND WHEY
	Parameter	211	66	457	388	789	211
	Description	Flow Rate	DOD5 Day Total	Solids Suspended Total	Phosphorus Total As P	Nitrogen Ammonia (NH3-N) Total	Flow Rate
	Units	MGD	MG/L	MG/L	MG/L	MG/L	MGD
Summary Values	Monthly Avg	0.3611	241	152	5.2	14.8	0.0917
	Daily Max Amt	0.4861	330	216	7.9	33.5	0.1640
	Daily Min Amt	0.2616	190	102	4.0	9.3	0.0150
	Week 1 Avg (1-7)	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
	Week 2 Avg (8-14)	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
	Week 3 Avg (15-21)	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
	Week 4 Avg (22-28)	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
	Geo Mean	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX
Limit(s) In Effect	Monthly Avg						
	Daily Max Amt						
	Daily Min Amt						
	Weekly Average						
	Geo Mean						
QA/QC Information	LOD				0.02 mg/L	0.10 mg/L	
	LOQ				0.07 mg/L	0.33 mg/L	
	QC Exceedence						
	Lab Certification No.		43/004750	43004750	43004750	43/004750	

Footnotes

General Remarks

NEW PERMIT LIMITS NOT IN EFFECT DUE TO CONSTRUCTION DELAY.

Laboratory Quality Control Comments

EFF BOD 5/24 - NEXT SAMPLE OK

Submittal of this form is required by section 283.55, Wis. Stats. and chapters NR 205 and 214, Wis. Adm. Code.

Personally identifiable information collected on this form may be used for purposes other than that for which it was originally collected. Under Wisconsin's open records laws, DNR is required to provide all non-confidential information to any person who requests it. Such information may be provided to the public in written or electronic form. Information reported may be made available to the public via a DNR web page.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions about this form, please call Linda Vogen at (920)492-5876.

Return Form To

Linda Vogen
Po Box 10448
Green Bay, WI 54307-0448

Authorized Representative Signature | Date

Operator Signature | Certificate Number | Date

Make two copies of the completed form. Keep one copy and return the original and one copy to the DNR address provided.

Appendix C

Sample PCS Edit Audit Report Page

RUN DATE: [redacted]/15/99 PERMIT COMPLIANCE SYS[redacted] EDIT AUDIT REPORT [redacted]DITRPT
PAGE: 3
REGION: 06 USER-ID: NMW BATCH-ID: BNW72 REGION: 06

ACCEPTED TRANSACTIONS

TRANS ID	TRANS TYPE	NPDES NUMBER	KEY VALUE	DATA ELEMENT	GEN	VALUE	ERR MSG, WARNING(W) OR INFORMATION(I)
MV	ADD	LA0002933	001B 9 5 01092 1 0 0 19990430	RFRQ		03/07	
				DMRR		19990520	
				DMDL	G	05	
MV	ADD	LA0002933	001B 9 5 32102 1 0 0 19990430	MVIO	G	E00	
				MQAV		0.00	
				MQMX		0.00	
				RFRQ		03/07	
				DMRR		19990520	
				DMDL	G	05	
MV	ADD	LA0002933	001B 9 5 32106 1 0 0 19990430	MVIO	G	E00	
				MQAV		0.05	
				MQMX		0.64	
				RFRQ		03/07	
				DMRR		19990520	
				DMDL	G	05	
MV	ADD	LA0002933	001B 9 5 34311 1 0 0 19990430	MVIO	G	E00	
				MQAV		0.04	
				MQMX		0.33	
				RFRQ		03/07	
				DMRR		19990520	
				DMDL	G	05	
MV	ADD	LA0002933	001B 9 5 34391 1 0 0 19990430	MVIO	G	E00	
				MQAV		0.00	
				MQMX		0.00	
				RFRQ		03/07	RFRQ DOES NOT AGREE WITH MATCHING LI(I)
				DMRR		19990520	
				DMDL	G	05	
MV	ADD	LA0002933	001B 9 5 34396 1 0 0 19990430	MVIO	G	E00	
				MQAV		0.00	
				MQMX		0.00	
				RFRQ		01/07	RFRQ DOES NOT AGREE WITH MATCHING LI(I)
				DMRR		19990520	
				DMDL	G	05	
MV	ADD	LA0002933	001B 9 5 34418 1 0 0 19990430	MVIO	G	E00	
				MQAV		0.00	
				MQMX		0.00	
				RFRQ		03/07	RFRQ DOES NOT AGREE WITH MATCHING LI(I)
				DMRR		19990520	
				DMDL	G	05	
MV	ADD	LA0002933	001B 9 5 34425 1 0 0 19990430	MVIO	G	E00	

Appendix D

Sample Region 6 DMR Receipt Tracking

DMR TRACKING

NPDES #	PIPE #	11/98	12/98	01/99	02/99	03/99	04/99
TX0003191	TX1A	12/18/98	01/19/99	02/16/99	03/23/99	04/21/99	05/24/99
	TX1S	**********			**********		
	001A(3)	12/18/98	01/19/99	02/16/99	03/23/99	04/21/99	05/24/99
	002A(2)	12/18/98	01/19/99	02/16/99	03/23/99	04/21/99	05/24/99
TX0004605	TX1S	**********					05/20/99
	001B	12/18/98	01/20/99	02/17/99	03/12/99	04/20/99	05/20/99
	101A	12/18/98	01/20/99	02/17/99	03/12/99	04/20/99	05/20/99
TX0004839	TX1Q	**********		02/22/99	**********		05/20/99
	TX1S	**********					05/20/99
	001A(2)	12/16/98	01/21/99	02/22/99	03/23/99	04/19/99	05/20/99
	001Q	**********		02/22/99	**********		05/20/99
	001Y(8)	**********					**********
TX0004871	TX1S	**********					01/26/99
	TX7Q	**********		01/26/99	**********		04/19/99
	TX7S	**********					01/26/99
	001A	12/21/98	01/22/99	02/26/99	03/26/99	04/19/99	05/20/99
	002A	12/21/98	01/22/99	02/26/99	03/26/99	04/19/99	05/20/99
	003A	12/21/98	01/22/99	02/26/99	03/26/99	04/19/99	05/20/99
	004A	12/21/98	01/22/99	02/26/99	03/26/99	04/19/99	05/20/99
	006A	12/21/98	01/22/99	02/26/99	03/26/99	04/19/99	05/20/99
	007A(2)	12/21/98	01/22/99	02/26/99	03/26/99	04/19/99	05/20/99
	008A	12/21/98	01/22/99	02/26/99	03/26/99	04/19/99	05/20/99
	009A	12/21/98	01/22/99	02/26/99	03/26/99	04/19/99	05/20/99
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	TX1S	**********					05/26/99
	TX1T	**********					05/26/99
	001A(3)	12/21/98	01/27/99	02/26/99	03/18/99	04/23/99	05/26/99
	004A	12/21/98	01/27/99	02/26/99	03/18/99	04/23/99	05/26/99
	005A	12/21/98	01/27/99	02/26/99	05/03/99	04/23/99	05/26/99
TX0006033	TXAQ	**********		02/22/99	**********		05/20/99
	TXCS	**********					05/20/99
	TX3S	**********					05/20/99
	001A(2)	12/22/98	02/22/99	02/22/99	03/23/99	04/21/99	05/20/99
	001Y(8)	**********					05/20/99
	002A	12/22/98	02/22/99	02/22/99	03/23/99	04/21/99	05/20/99
	003A	12/22/98	02/22/99	02/22/99	03/23/99	04/21/99	05/20/99
	003Y(8)	**********					05/20/99
	004A	12/22/98	02/22/99	02/22/99	03/23/99	04/21/99	05/20/99
	005A	12/22/98	02/22/99	02/22/99	03/23/99	04/21/99	05/20/99

Appendix E
Abbreviations

CBI	confidential business information
CFR	Code of Federal Regulations
CR	central receiving
CWA	Clean Water Act
DEQ	Department of Environmental Quality
DMR	Discharge Monitoring Report
DNR	Department of Natural Resources
e-mail	electronic mail
EPA	Environmental Protection Agency
FOIA	Freedom of Information Act
GIS	geo-spatial or geographic information system
LMI	Logistics Management Institute
N/A	not applicable or not available
NCC	National Computer Center
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
NTIS	National Technical Information Service
OECA	Office of Enforcement and Compliance Assurance
PC	personal computer
PCS	Permit Compliance System
QNCR	Quarterly Noncompliance Report

REI	Reinventing Environmental Information
SNC	significant noncompliance
USPS	United States Postal Service

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13. ABSTRACT *(Maximum 200 words)*

The U.S. Environmental Protection Agency (EPA) seeks to improve its operating procedures and reduce the reporting burden of the regulated community. The EPA is committed to implementing electronic reporting mechanisms, including electronic commerce (EC), electronic data interchange (EDI), Web-based forms, and other technologies, as a means of streamlining compliance reporting. By using EC and EDI, reporting organizations, state and local environmental agencies, and the EPA can reduce the costs of compliance reporting, improve data quality, integrate the data across systems, improve data access, and eliminate processing delays.

This report documents the current business process analysis for reporting Discharge Monitoring Reports in the National Pollutant Discharge Elimination System program. This analysis will provide the framework for the central receiving model in the "to be" environment.

14. SUBJECT TERMS

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